NEW REMEDIES.

AN ILLUSTRATED MONTHLY TRADE JOURNAL OF MATERIA MEDICA, PHARMACY, AND THERAPEUTICS.

VOL. X., NO. 3. WHOLE NO. 81.

FRED'K A. CASTLE, M.D., - - EDITOR.
CHARLES RICE, PH.D., - ASSOCIATE EDITOR.

PUBLISHED BY

WILLIAM WOOD & CO., No. 27 Great Jones St., N. Y.

MARCH, 1881.

SUBSCRIPTION PRICE, per year, - - - - - $2.00
SINGLE COPIES, - - - - - - - - - .20

Address all communications relating to the **business** of NEW REMEDIES, such as subscriptions, advertisements, change of Post-Office address, etc., to WILLIAM WOOD & Co., 27 Great Jones St., New York City, to whose order all postal money orders and checks should be made payable. Communications intended for the **Editor** should be addressed to THE EDITOR OF NEW REMEDIES, in care of William Wood & Co., 27 Gt. Jones St., New York City.

NEW REMEDIES is issued about the middle of each month, dated for the month ahead. Changes of advertisements should reach us before the 5th. New advertisements can occasionally be inserted after the 12th.

REGULAR ADVERTISEMENTS according to size, location and time. Special rates on application.

SUBSCRIPTION PRICE for "NEW REMEDIES," including postage to foreign countries:

Austria, 6 gulden (silver).
Chili, 3 dollars (Chilian).
England, 12 *s.* 6 *d.*
France, 13 f. 4 c.
Greece, 14 drachmas.
Germany, 10 marks 50 pf.
Italy, 14 lire.
Peru, 3 soles.
Russia, 3½ roubles.
Spain, 14 pesetas.
South America, 24 reals.
Sweden, Norway and Denmark, 9 kronor.

Remittances should be made by Post Office money order, or by drafts on London or New York, when practicable.

ELECTROTYPES of the illustrations contained in NEW REMEDIES will be furnished for 50c. per square inch.

EDITORIAL.

J. Milner Fothergill, M.D., Edin.

DR. J. MILNER FOTHERGILL was born in Morland, in the county of Westmorland, England, on April the 11th, 1841. Both by father's and mother's side he is descended from well-to-do yeomen who have lived, side by side, in Ravenstonedale, a dale on the Yorkshire border of Westmorland, for over six hundred years. His burly figure, and frank manners, amounting at times almost to bluffness, tell of his yeoman descent and characteristics. His father was a doctor who settled down, without ambition, beside his people. Thus reared in an atmosphere of physic, in time, he was apprenticed to his father, made infusions and pills, spread plasters; and even took out a bottle of medicine occasionally. He thus learned his profession from the lowest rung of the ladder upwards. He was educated in the University of Edinburgh, where at first he showed little promise, being mainly engaged in studying life. After a time he started to work hard, and took his degree of M.D. with credit in August, 1865. A failing heart in his father at this time called him home from the hospital career then opening out to him, and for four years he worked hard and read hard in his native village. His strong bias towards physiology arose from the fact that the late Prof. J. Hughes Bennett rejected him for physiology on his first examination; which, he always asserts, was the making of him. His father's only extravagance was a very extensive medical library; and here young Fothergill read voluminously, and made up for wasted years as a student. Feeling the need of a wider field for observation he applied for and gained the post of Senior Resident medical officer of the Leeds Public Dispensary when it fell vacant in Nov., 1859. Here he worked assiduously for nearly two years: and was also Secretary to the Leeds Medical Society—now the Yorkshire Medico-Chirurgical Society. During this time he gained the Hastings gold medal of the British Medical Association with an Essay on "Digitalis; its Mode of Action, and its Use;" an essay which was well received, and which has made its mark on the treatment of heart-disease. In the autumn of 1871, he went out to Vienna; chiefly to study the morbid changes in the heart in the Pathological Institute under Rokitanski. In the spring of 1872, he returned by Berlin in order to see the physical examination of Prof. Traube, and the Museum of Virchow.

During this time he wrote a work "The Heart and its Diseases; with their Treatment;" its German associations giving it a crabbed, involved style, very unlike his present writings. Some severe reviews showed him the errors of his ways: and by these he determined to profit. He passed the examination for the membership of the Royal College of Physicians of London in 1872, and settled there as a consultant; fully conscious of the long struggle before him. Shortly he became attached to the West London Hospital as Assistant Physician; and later on to the City of London Hospital for Diseases of the

Chest (Victoria Park), where he is now the Senior Assistant Physician. Therapeutics are his favorite study; and his early experience, and his training under his father have given a decidedly practical bearing to his study of the subject. The tenacity of purpose for which these "dalesmen" of the North are proverbial, has been demonstrated markedly in his steady pursuit of his object. In Dec., 1873, he delivered a lecture on "The Depressants of the Circulation" before the Medical Society of London, which did much to clear up the action of aconite, chloral, and other agents which lower the circulation, and promote perspiration and lessen temperature in pyretic states; or induce sleep when sleeplessness is due to high arterial tension.

In 1876 appeared "The Practitioner's Handbook of Treatment; or the Principles of Therapeutics"—a work which at once commanded a large sale both here and in Great Britain. It was an attempt to unite medicine as a science and an art. It is described by the *London Medical Record* of Sept., 1880, as a work which "will be especially welcome to those who are interested in the endeavor to show the agreement between science and practice." It is already in a second edition. In 1875–76, Dr. Fothergill had grants from the British Medical Association to conduct a series of experiments as to the antagonism of certain poisons, which are also powerful remedial agents. The chief results attained were the antagonistic actions of aconite and digitalis on the heart, and of belladonna and strychnia to aconite on the heart and respiration; on which are based his views of the direct action of these agents—belladonna, strychnia (as excitants), and aconite and chloral (as depressants) upon the centres of the circulation and of the respiration. These views are expounded in "The Antagonism of Remedial Agents; and what it Teaches:" an essay which gained for him the coveted prize—"The Fothergillian gold medal of the Medical Society of London" for 1878, long the object of his wishes. One of the practical outcomes of these researches was the subcutaneous injection of a whole grain of atropia to a woman moribund from opium-poisoning, with complete success. This was the first deliberate administration of a lethal dose of one poison to antagonize the fatal action of another poison, Feb. 14th, 1878. The utility of his researches as to the action of drugs upon the circulation and respiration in actual practice is now widely recognized.

In 1879 appeared the second edition of "The Heart and its Diseases, with their Treatment; including the Gouty Heart." It is written in his present attractive style, and is already regarded as a standard work.

Dr. Fothergill is a voluminous writer with a facile pen. He has been for some years the London correspondent of the *Philadelphia Medical Times*. He has contributed a number of articles to *Good Words*, of which "Diana Smith" (1880) is of much interest. He is also the author of "The Maintenance of Health" (1874) and of several smaller works as "Semeiology," "Aids to Rational Therapeutics" in Putnam's Student's series, "Food for the Invalid" (a cookery book), "The Physiologist in the Household," and numerous pamphlets: while he has contributed to nearly every medical journal in Great Britain. One characteristic of his writings is that he evidently believes what he says; and sometimes his expressions are vigorous to the verge of the offensive; but his enthusiasm on the subject of the treatment of disease, preventive and curative, is undoubtedly both genuine and contagious. He is a well-marked instance of the fact that when stout men are mentally active, as many of stout men are, their mental activity is such that it almost amounts to restlessness.

In 1878 he was elected an Associate Fellow of the College of Physicians of Philadelphia, in the place of the late Fleetwood Churchill, the well-known Dublin Obstetrician; an honor of which he is very proud. His works meet with a ready sale in this country, where Dr. Fothergill has myriads of readers and many admirers; and his reception of Americans who call upon him is always friendly and hearty. It is said he meditates a lecturing tour here in a year or two, when he can make the personal acquaintance of many who cannot visit him in London.

The portrait of Dr. Fothergill which we publish with this number, is from a recent photograph.

Analyses.

THE answer in this number to a query implying an analysis, and the frequency with which we are called upon to furnish analyses or information respecting the composition of one or

another of the myriad of proprietary articles to be found in commerce, induces us to make the following remarks which we commend, with all courtesy, to the attention of correspondents.

We are perfectly willing to help our correspondents out of difficulties, in chemical matters, provided the object to be gained is a legitimate and proper one, or provided it is in the interest of science or for other equally powerful reasons.

We are *not* willing to furnish such information when the object of the inquirer is an entirely personal one, namely this: to get at the composition of a good salable article used in the arts, in perfumery, etc., for which he is trying to evade the expense of an analysis, to the evident damage of the *bona fide* owner of the preparation who is certainly entitled—if the preparation is legitimate and useful—to derive the proper benefit therefrom. Supposing John Jones should compound and put on the market a cologne which is universally conceded to be nicer than any other: we would all be justified in trying to imitate the same, and, if we thought we could equal it, we might say that ours was "equal to John Jones' cologne." But would it be considered equitable and just if we, having accidentally become possessed of J. J.'s formula, were to publish the same broadcast over the land? Or again, is it reasonable to expect of us to furnish, as a matter of course, analyses of minerals, earths, mineral springs, etc., all of which are of sufficient value to command the paid services of a chemist? Surely our pharmaceutical and medical journals are not intended to serve such purposes. The matter is different when the question turns upon some dangerous nostrum or secret remedy, which is known to act injuriously. These compounds have no ethical rights which the legitimate pharmacist or physician is bound to respect. We will, hereafter, as before, in common with our colleagues, take a firm stand against them, and, whenever we can, expose them; but, on the other hand, we have neither the time nor the inclination to make analyses of every class of bitters, balsams, cures, liniments, and other nostrums too numerous to mention, where the plain intention of the inquirer is, not to oppose them, but to imitate them, for the purpose of making money upon the credulity of the public.

MATERIA MEDICA, PHARMACY, AND THERAPEUTICS.

Examination of various "Loco" or "Crazy Weeds" of the Western United States.*

For several years past, the Department of Agriculture at Washington has received numerous letters from correspondents in Colorado, Kansas, California, and other Western States, giving information as to the poisonous action upon horses, cattle, and sheep of various plants popularly known as "loco-weeds," or "crazy-weeds." A considerable number of plants were also sent as samples. Those most frequently complained of were *Oxytropis Lamberti*, *Astragalus mollissimus*, and *Sophora sericea*. In addition, there have also been mentioned, and some samples have also been obtained of *Oxytropis multiflora*, *Oxytropis deflexa*, *Malvastrum coccineum*, and *Corydalis aurea*, variety *occidentalis*.

The reports from various correspondents and from widely separated regions agree closely as to the injurious and frequently fatal effect upon animals, of eating these "loco-weeds."

The habit of eating these weeds seems to be formed because of the scarcity, at certain seasons, of nutritious grasses. All, or nearly all of these plants, except *Oxytropis*, have a bitter, disagreeable taste, yet after the habit has once been formed, the animals reject the sweetest grasses. Among the symptoms first noticed are loss of flesh, general lassitude, and impaired vision; later the animal's mind seems to be affected; it becomes often vicious and unmanageable, and flesh and strength are both rapidly lost. When approaching some small object it will often leap into the air as though to clear a high fence. Frequently in these paroxysms horses have died from falling backward.

The time required for these weeds to kill animals varies greatly, some dying within three of four days, others lingering for a year longer. Some correspondents state that horses seem more susceptible to the influence of these plants than are either cattle or sheep; others report that all are affected similarly.

There is some difference of opinion as to the real cause of the diseases commonly attributed to "loco." Some think that the animals suffer not so much from direct poisoning as from lack of nutritive food and water. Mention is made of buttermilk as an antidote, but it seems not to have proved valuable.

Mr. Francis A. Wentz, of Kingsley, Kan., has instituted a series of "provings" of the herbs

* Abstract of a paper on this subject contained in the *Report of the Commissioner of Agriculture for the Year* 1879. (8vo, Washington, 1880, lately issued.) Compare also, on "*loco*" plants, the abstract of a paper by Prof. Rothrock in this journal, August, 1879, p. 232.

and seeds of *Sophora sericea* and the herb of *Astragalus mollissimus;* he hopes during the coming year to establish beyond question what, if any, particular constituents in these plants are poisonous to domestic animals. The department is indebted to him for much valuable information in regard to the action of these plants. At his request careful chemical examinations have been made of these particular plants; the work given in the report is as complete as time would allow, but a supplementary report will probably be made during the coming year.

The genus Sophora belongs to the natural order *Leguminosæ*. It embraces some 25 species found in different parts of the world. In North America we have four shrubby species, or some becoming small trees viz., *Sophora tomentosa*, found on the coast of Florida; *Sophora speciosa*, and *Sophora affinis*, found in Western Texas, New Mexico, and Mexico; and *Sophora Arizonica* in Arizona. *Sophora Japonica* is a middle-sized tree in Japan, which is in cultivation in many of our cities, and is quite an ornamental tree.

We have two native herbaceous perennial species, viz., *Sophora stenophylla* and *Sophora sericea*, ranging from Colorado to Mexico and Arizona, the first-named seldom reaching to Colorado.

Sophora sericea is described as follows:

Herbaceous, low, 6 to 12 inches high, more or less silky, canescent: stems ascending or decumbent, branching from the base; leaflets about 21, elliptic or cuneate oval, 2 to 3 lines long; racemes terminal, short, 1½ to 2 inches long, peduncled; calyx gibbous at the base, longer than the pedicels, campanulate, 5-toothed, teeth obtuse, half the length of the tube; corolla 4 lines long, banner reflexed, petals of the keel nearly distinct, acuminate, mucronate.—(Nuttall.)

This species is common on the high plains of Colorado and Nebraska, extending into the lower foot hills of the Rocky Mountains. The seeds of this species are of a yellowish-brown color, of an oblong shape, about one-quarter inch in length, and half as wide, slightly flattened, with a slender hilum or eye occupying two-thirds the length of the inner face of the seed.

On analysis, the plant was found to contain, in 100 parts: 0.23 of a volatile oil, 2.99 of a soft yellow resin, 1.37 of an alkaloid (obtained impure), 1.63 of a brown, hard resin, 1.22 of tannin, and other usual vegetable constituents. The poisonous nature of the plant is probably due to the alkaloid chiefly. But it is possible, though hardly probable, that the "soft, yellow resin" may also have some deleterious properties.

A subsequent analysis of the seeds of this plant, which have a much more persistent and bitter taste than the herb itself, yielded 1.74% of the alkaloid, besides 9.37% of a fixed oil, which was found to contain 95.62% of fatty acid insoluble in water, and which fatty acid was identified with linoleic acid, the chief constituent of linseed oil.

Although abundant chemical evidence was obtained during the progress of the analysis that both herb and seeds contained a considerable amount of a very bitter alkaloid, still its isolation in a pure form was a matter of considerable difficulty. In the seeds it is associated with malic acid and a yellowish-brown substance of active reducing properties. From this latter substance it seemed almost impossible to separate it, but, by adopting several expedients, it was finally isolated in what seems to be a tolerably pure condition. The methods are given exactly as they were applied. Several operations might be dispensed with in the future, and a much simpler scheme devised, as the outgrowth of the experience gained.

Separation of the Alkaloid.—268 grams of the finely powdered seeds were percolated with Squibb's ether until apparently exhausted. This ethereal extract contained, when evaporated, the fixed oil, with a little coloring matter. The seeds were then dried and extracted with 94 per cent alcohol, to which had been added 5 per cent of acetic acid. When the percolate no longer had a bitter taste, the treatment with alcohol was discontinued. The alcohol was evaporated, the residue treated with water and filtered, and the acid filtrate was precipitated by normal acetate of lead. A small amount of a flocculent flesh-colored precipitate formed, which proved upon investigation to be malate of lead, associated with a little coloring matter. The filtrate from this lead precipitate was treated with sulphuretted hydrogen, filtered, the filtrate concentrated on the steam-bath, with addition toward the end of a faint excess of ammonia. When well concentrated and nearly free from ammonium acetate, the liquid was acidified with sulphuric acid and precipitated by excess of potassic mercuric iodide ("Mayer's solution"). An abundant, bulky, amorphous, yellowish-white precipitate was formed. This precipitate was washed on a filter with cold water until the washings became somewhat turbid from dissolved precipitate. It was then suspended in water and treated with sulphuretted hydrogen, filtered from black mercuric sulphide, and the very acid filtrate concentrated to expel all free sulphuretted hydrogen. This liquid was then precipitated by a solution of iodine in potassic iodide. When insufficient iodine was added for complete precipitation of the alkaloid, the precipitate had a brick-red color, but with excess of iodine the precipitate was very nearly black, much resembling free iodine in color. This precipitate was washed with cold water and treated, in presence of water, with moist silver oxide. After slight concentration on the water-

bath the liquid was filtered from the silver iodide and excess of silver oxide. The filtrate was deep wine-red by transmitted light, and by reflected light had a beautiful and strongly marked yellowish-green fluorescence, which was less evident upon acidulating the liquid with sulphuric or hydrochloric acid.

The solution of the alkaloid was intensely bitter; had a distinctly alkaline reaction, and behaved towards reagents the same as the alkaloid obtained from the herb (see original paper).

The alkaline liquid was neutralized with sulphuric acid, evaporated, and the residue dissolved in absolute alcohol. On being percolated through purified animal charcoal, all the alkaloidal sulphate was retained by the latter. After washing the charcoal with cold absolute alcohol, it was treated with hot absolute alcohol, whereby the alkaloid was removed as a neutral sulphate. This, when evaporated, left a red-brown, neutral, very hygroscopic residue of exceedingly bitter taste, which gave positive tests both of sulphuric acid and of an alkaloid.

It seems very probable that this alkaloid is identical with the *sophoria* discovered by Prof. H. C. Wood, Jr., in the seeds of *Sophora speciosa*.

In fact, a physiological experiment upon a kitten gave exactly the same indications as are recorded by H. C. Wood, Jr., in the *American Journal of Pharmacy*, January, 1878, page 34, and in the Philadelphia *Medical Times*, August 4th, 1877.

In a single experiment made here the following symptoms were observed: To a half-grown kitten was given an extract from the seeds containing not over one-fourth grain of the alkaloid. Except excessive frothing, no decided effect was noticed until fifteen minutes had passed; then a slight spasmodic twitching of the lower extremities was noticed. This continued about half an hour, when a second dose of the same amount was administered. This increased the number and frequency of the twitchings, and after a few minutes' vomiting occurred, followed by partial stupor and a general nervous twitching of the whole body; there seemed to be no effect upon the mind, and no delirium at any time. Lack of material prevented further experimentation, and the cat recovered fully in a couple of hours.

It is hoped that a more complete chemical and physiological investigation may be made during the coming year; any results will appear in the next annual report. It is hardly to be doubted that the alleged poisonous effects of this plant are due largely or entirely to this alkaloid; at the same time it is not improbable that some medicinal uses may be discovered which will fully compensate for the labor of analysis, if not for the loss of cattle already incurred by our western farmers.

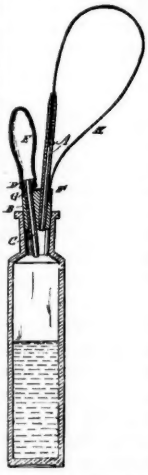
Soluble Saccharate of Iron.

THE following process, by C. Schneider, is said by the author to furnish a superior preparation:

In a capacious porcelain capsule mix 10 parts of (neutral) solution of chloride of iron (ferric), of spec. gr. 1.480, with a solution of 4.5 parts of sugar, in an equal weight of cold water. Then add in 4 or 5 portions a solution of 12 parts of perfectly pure carbonate of sodium in 24 parts of water, and assist the escape of carbonic acid gas by brisk stirring with a glass-rod. The resulting homogeneous magma dissolves at once, on the addition of 6 parts of solution of soda, of spec. gr. 1.330. The solution is now diluted with 83 parts of distilled water, and poured, under stirring, into a mixture of 83 parts each of alcohol and water. This produces a finely divided, quickly settling precipitate, which is easily washed with diluted alcohol (1:1), and finally with a little distilled water. It yields a light-brown syrup of a pure and agreeable taste. —*Arch. d. Pharm.* and *Ph. Zeit. f. Russl.*, No. 17.

Drop-Attachment for Bottles.

RAOUL BRAVAIS, of Paris, is the inventor* of an arrangement for measuring fluids in drops. The tube *A*, having a small lumen, passes just through the stopper *B*. Another one *C* of larger calibre and having a shoulder *D* at its outer end for its secure attachment to a rubber bulb *E* is also inserted. In using the dropper, the bottle is inverted and pressure made on the rubber bulb. This manœuvre, by increasing the pressure in the bottle, forces it contents out through the tube *A* in drops.



Bravais' Dropping Stopple.

Attached to the stopper at *F* is a wire *H* for clearing the dropping tube from obstruction, which, when not in use, may be coiled in a spiral about the tube and fixed by passing the free end under two or three turns of the spiral. The bore of the tube *A* is made small, in order that the contents of the bottle may not escape when it is tipped over by acccident or otherwise.

Candle Tree.†

THIS is the *Parmentiera cerifera* Seemann, called by the natives *Palo de Velas*. In the valley of the Chagres, South America, it forms entire forests. In entering them, a person might almost fancy himself transported into a chandler's shop. From all the stems and lower

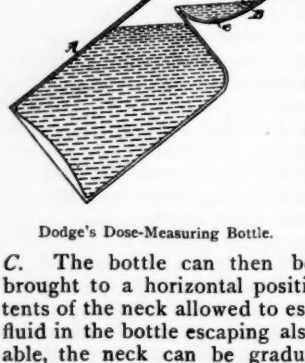
* Pat. No. 236,538, January 11th, 1881.

† Printed as answer to Query 859, page 90.

branches hang long cylindrical fruits of a yellow wax color, so much resembling a candle as to have given rise to the popular appellation. The fruit is generally from two to three, but not unfrequently four feet long, and an inch in diameter. The tree itself is about twenty-four feet high, with opposite trifoliated leaves, and large white blossoms, which appear throughout the year, but are in greatest abundance during the rainy season. The Palo de Velas belongs to the natural order *Crescentiaceæ*, and is a Parmentiera, of which genus hitherto only one species, the *P. edulis*, of de Candolle, was known to exist. The fruit of the latter, called Quauhscilote, is eaten by the Mexicans, while that of the former serves for food to numerous herds of cattle. Bullocks especially, if fed with the fruit of this tree, guinea grass, and *Batatilla* (*Ipomœa brachypoda* Benth.), soon get fat. It is generally admitted, however, that the meat partakes in some degree of the peculiar apple-like smell of the fruit, but this is by no means disagreeable, and easily prevented, if, for a few days previous to killing the animal, the food is changed. The tree produces its principal harvest during the dry season, when all the herbaceous vegetation is burned up, and on that account its cultivation in tropical countries is especially to be recommended. A few acres of it would effectually prevent that want of fodder which is always most severely felt after the periodical rains have ceased.

Dose-Measuring Bottle.

James M. Dodge, of Chicago, is the inventor* of a dose-measuring bottle the essential features of which are here illustrated. The measuring receptacle is the neck *B*, of the bottle *A*, which is so formed that when filled by reversing the bottle, and then tilting it to the position shown in the figure, the dose to be used remains in the dependent portion of the neck *C*. The bottle can then be uncorked and brought to a horizontal position, and the contents of the neck allowed to escape without the fluid in the bottle escaping also. If it is desirable, the neck can be graduated for various quantities as shown in the figure. The inventor suggests several modifications of his invention that are calculated to accomplish the same purpose.

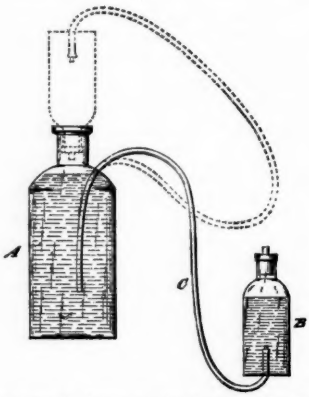


Dodge's Dose-Measuring Bottle.

* Pat. No. 236,947, January 25th, 1881.

Apparatus for Storing and Drawing Liquids.

S. H. B. Cochrane, of Tippecanoe City, Ohio, has devised a form of siphon* especially designed for the use of druggists and others who keep liquids in large bottles or receivers, from which it is desired to withdraw the liquid without removing the same from its shelf. *A* is the receiver. *B*, a smaller vessel of any desired form, which serves, when not in use, as a stopper for the large vessel. *C* is a tube which extends from near the bottom of the receiver *A*; a short distance into the smaller vessel *B*. Both vessels being filled with liquid, the smaller one being depressed or held so as to discharge its contents will cause a vacuum in the siphon and establish a flow from *A* into *B*, and the level of the drip pipe in the mouth of *B*, being depressed below the level of the fluid in *A*, will cause a discharge of fluid drop by drop, or more rapidly in proportion to the difference in their respective levels. When a sufficient quantity of liquid has been drawn the flow may be stopped by raising the smaller vessel above the level of the fluid in *A* and, by inserting it in the mouth of *A*, as shown in the dotted lines of the figure, when the atmospheric pressure will cause it to remain filled to the mouth of the siphon.



Cochrane's Apparatus for Drawing Liquids.

Testing Commercial Subnitrate of Bismuth.

Crude metallic bismuth is contaminated, more or less, with other substances, among which there are, unfortunately, some which are injurious to health, and must therefore be removed as far as possible, if not from the metal itself, at least during the manufacture of medicinal salts from the metal. The more usual impurities are antimony, lead, and arsenic; next come sulphide of bismuth and tin; and, finally, copper, silver, nickel, iron, etc. But, in testing subnitrate of bismuth, regard must be had, not only to the impurities likely to have been in-

* Pat. No. 236,671, January 8th, 1881.

troduced from the use of an impure metal, but it is also necessary to insure the absence of foreign admixtures. Of course, many pharmacists have neither the time nor, in some cases, the facilities or skill to make a complete qualitative and quantitative analysis of this or any other chemical. Yet it is the duty of every one to test for the more common impurities liable to be present from the mode of manufacture, and, under all circumstances, to insure the absence of dangerous or injurious contaminations. The following are the principal tests which subnitrate of bismuth may be subjected to to determine its fitness for medicinal use :

1. Dissolve 1 part of the salt in 5 parts of nitric acid, spec. gr. 1.200, with the aid of a gentle heat. No residue should be left; nor should any effervescence take place (carbonates).

2. Dilute the preceding solution with 5 volumes of boiling distilled water. Cool and filter. The filtrate must remain unaffected by adding to different samples of it solution of nitrate of silver (chloride), nitrate of barium (sulphate), sulphate of sodium or sulphuric acid (lead), and hydrochloric acid (silver).

3. Boil 1 part of the salt with 10 parts of diluted acetic acid; pour off the liquid, precipitate the bismuth completely by hydrosulphuric acid, and filter. The filtrate must leave no residue on evaporation (alkalies, alkaline earths).

4. Boil one part of the salt with 10 parts of a strong solution of soda, free from chloride. Not more than traces of ammonia should be evolved, recognizable by white fumes, when brought in contact with a glass rod dipped in acetic acid ("hydrochloric acid would be too exacting a test."—Hager).

Filter the alkaline solution, from which all the bismuth has been precipitated as oxide, and pass hydrosulphuric acid through a portion of it. It should not become colored, nor deposit a precipitate (lead, iron, zinc).

5. Now, if it is desired to look chiefly for arsenic, without taking account of the possible presence of antimony—and the former is very frequently the sole object of the test—the preceding alkaline solution may be used, that is, the portion which has *not* been treated by hydrosulphuric acid. On boiling this with some pieces of pure zinc, or on treating it with a little sodium amalgam (prepared by warming 10 parts of mercury, and adding to it gradually, and in small pieces, 1 part of metallic sodium), hydrogen is eliminated, and, if arsenic was present, this is evolved as arseniuretted hydrogen * (antimony does not form antimoniuretted hydrogen, under these circumstances), from which the arsenic mirror may be obtained in the usual manner. Or the gas may be passed through solution of nitrate of silver, when a corresponding amount of metallic silver will be precipitated, and the arsenic be dissolved as arsenious acid. The silver remaining in solution is precipitated by hydrochloric acid in very slight excess, and from the filtrate the arsenious acid is precipitated as yellow sulphide, by hydrosulphuric acid, and may then be further identified.

6. If Marsh's test is to be used, it is necessary to get rid of the nitric acid. This is best done by heating 1 part of the salt with 1 part of concentrated sulphuric acid, until all the nitric acid is expelled, and, if necessary, repeating the process. Then dissolve the residue in about 10 parts of dilute pure sulphuric acid, add a few pieces of pure zinc, and pass the generated gas through solution of nitrate of silver. If arsenic was present, metallic silver will be precipitated, and arsenious acid be found in solution, which may be detected, as stated in the preceding paragraph. And if antimony was present, this will be found in combination with silver as a precipitate (antimonide of silver Ag_3Sb).

Perfectly pure subnitrate of bismuth, treated by either of the preceding methods, should not yield a gas which blackens either solution of acetate of lead (sulphides), or solution of nitrate of silver (arsenic, antimony).

* When using sodium amalgam, any phosphates present would vitiate the test, by generating phosphorous hydride, which also decomposes silver solution.

On a New Method of Preparing Chloroform and Bromoform.*

In a former note (*Bulletin de la Société Chimique de Paris*, Vol. XXXIV., p. 674, 1880), I described a method by means of which the substitution of chlorine and bromine in hydrocarbon compounds could be effected by the combination of an elevated temperature and the condensing properties of certain porous bodies. I will now give the results which I have obtained by the application of this method to the preparation of the chlorine and bromine derivatives of the methylic series. Taking methyl chloride as the starting point, the compounds dichlormethane (CH_2Cl_2), chloroform ($CHCl_3$), and carbon tetrachloride (CCl_4) may be very easily obtained by the following process :

A steady current of chlorine, furnished by a continuous generating apparatus, previously mixed with the requisite proportions of methyl chloride, is made to pass through a long tube containing animal charcoal, and heated from 250° to 350° C. At the commencement of the

* On the Direct Preparation of Bromine and Chlorine Derivatives of the Methyl Series, particularly of Chloroform and Bromoform, by M. Albert Damoiseau, *Comptes Rendues*, Vol. XCII., p. 42, 1881.

Translated from the French by Albert E. Hoppock. The thanks of the translator are due to M. Benjamin, Ph.B., for aid rendered.

reaction, it may be readily seen from the free end of the tube that the operation proceeds with perfect regularity, and that the chlorine has absolutely disappeared. The gas is then cooled, after which it is washed with water to remove the hydrochloric acid. The product thus obtained will be found to correspond to the mixture of chlorine and methyl chloride used. By this means, it is possible to prepare many hundreds of grams of chloroform.

The reaction is effected with such promptness that the economic production of chloroform by this process can no longer be a matter of doubt. It is only necessary that sufficiently pure methyl chloride be procurable at a reasonable price.

The reaction of bromine on methyl bromide may also be accomplished very easily, and thus there may be produced at will the different compounds:

Dibrommethane ($C.H_2Br_2$).

Bromoform ($CHBr_3$).

Carbon tetrabromide (CBr_4).

My observations also show that a large number of substitution derivatives may be obtained when they are stable at the indicated temperature (*i. e.*, between 250° and 350° C.). This influence of temperature is often found to be modified by the conditions of the operation, and especially by the presence of animal charcoal.

Thus, acetic acid, which, under ordinary circumstances, is only decomposed at a dull red heat, gives, when heated to 300° C. with chlorine and animal charcoal, not only the chlorine substitution compounds of this acid, but also the decomposition products, with their substitution derivatives. If, for instance, a mixture of two, four, or six atoms of bromine, with one molecule of acetic acid, be operated on, it will be noticed that at about 300° C. the gas which passes out from the tube will have become sensibly decolorized, but after the traces of hydrobromic acid have been absorbed, the presence of a notable quantity of carbonic acid can be shown. The condensable products consist almost entirely of bromine derivatives of methyl hydride.

With chlorine and acetic acid, after sufficient time has elapsed, comparatively large quantities of chloroform may be obtained. With bromine, the operation is more readily effected, and it constitutes the most advantageous method of obtaining bromoform. An illustration of this circumstance is herewith given.

A mixture of one part of crystallizable acetic acid and eight parts of bromine is inserted, drop by drop, into the tube filled with animal charcoal, and heated to 280°–300° C. The products of the reaction are cooled, and then allowed to fall into a flask, so placed that the hydrobromic acid is first absorbed in a wash bottle. A small quantity of bromine is carried over with the carbonic acid. Under these conditions, it is possible to obtain, in a few hours, 500 grams of a product, four-fifths of which pass over between the temperature of 147° to 155°; bromoform boiling at 152°.

Madia Oil.*

Graines de Madi (or *Madie*) are the seeds of *Madia sativa* Mol., which is a handsome annual plant, native of Chili, and has been naturalized in Europe. It grows about two feet high, and produces flowers in July and August, of a pale-yellow color.

The whole plant is viscid, and exhales a powerful ordor, which is somewhat like heated honey. It requires rather a rich soil, of a ferruginous character. The root is fusiform, the stem cylindrical, and furnished with sessile, three to five longitudinally-nerved leaves, which are opposite on the lower portion of the stem, and alternate on the upper. M. Victor Pasquier, who has written on the culture of the plant, analyzed the seed, and found 100 parts to consist of 26.5 of testa, and 73.5 of kernel; 100 parts of the latter yielded 31.3 of vegetable albumen, gum, and lignine, 56.0 of *fixed oil* (*Huile de Madie*, Madia oil), and 12.5 of water. In dry seasons, the oil is both more abundant and better than in damp seasons. The produce of oil, compared with that of the poppy, is equal; with colza, as 32 to 28; with linseed, 32 to 21; with the olive, 32 to 16.

The leaves and stems of this plant are rejected by cattle, but the oil cake, which always contains a considerable portion of the oil, forms a nutritive food, of which they are very fond. The oil, expressed without heat, is transparent, of a golden-yellow color, inodorous, rather fatter than the oil of rape or olives, and of a soft, agreeable, nutty taste. It is fit to be employed in the preparation of food, in salads, and for all the purposes of the best and mildest fixed oils. It burns with a brilliant reddish-white flame, and leaves no residue. It is little liable to become rancid, and is completely decolorized by animal charcoal.

The oil of the seeds of this plant, which is extensively cultivated in France, will yield, according to the observations of Braconnet, a solid soap, similar to that made from olive oil. Boussingault obtained from the oil a solid as well as a fluid acid. The solid one is probably palmic acid; it fuses at exactly 140° F. The fluid acid, in its properties, resembles the oleic acid discovered by Chevreul, and seems to dry easily.

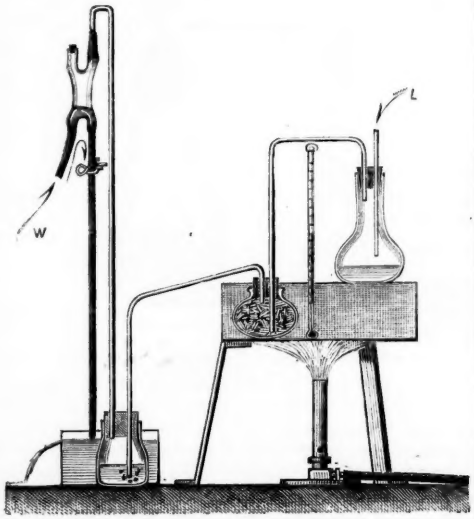
The following is the percentage composition of each, as determined by his analysis:

	Solid Acid.	Fluid Acid.
Carbon	74.2	76.0
Hydrogen	12.0	11.0
Oxygen	13.8	13.0

* Printed as answer to query 858, p. 90.

Flavescin, a New Indicator.

In the course of experiments with commercial alcohol, Mr. F. Lux observed repeatedly that certain samples assumed a deep yellow color on the addition of alkalies, which was again discharged on supersaturating with acids. Thinking that there might be a body present which could possibly be used as an indicator, he investigated the subject, and came to the conclusion that the substance, whatever it might be, was an extractive matter dissolved by the alcohol from the oaken casks in which it was contained. Further experiment revealed the fact that a comparatively much larger quantity of this substance was contained in the wood of those casks which had been burned out, and the fact that a moderate degree of heat aided in the production of this body was further confirmed by a considerable increase in quantity of this substance obtained from oak, which had been heated for some hours to 200° C. (392° F.). After numerous trials, the author adopted the following method for obtaining larger quantities of the substance: A broad and low glass-vessel (such as the oil-reservoir of a kerosene-lamp) is filled with small oak splinters, about 2–3 *cm.* long and a few *mm.* thick, and closed with a doubly perforated cork. This vessel is connected by glass tubing with two other flasks (in the manner shown in the cut). The larger flask (on the right) contains some water, and the longer glass tube reaches to within a few *cm.* over the surface of the water. Both of these vessels are on a sand-bath, that containing the oak splinters being entirely imbedded in sand, while the other is merely placed on top. The temperature of the sand at the bottom should be between 220 and 260° C. (428–500° F.). On the other side, the apparatus is connected by glass tubing with a condensing vessel standing in a cooler, and the condenser itself is connected with an aspirator. As will be seen from the cut, the water used for aspiration is at the same time utilized for cooling the condenser. All that is now necessary is to aspirate air through the apparatus. The object of the water in the first flask is to impregnate the air with some aqueous vapor which is requisite for the production of the coloring matter. After the passage of a moderately strong current of air (about 20–25 liters per hour) during 5 to 8 hours, from 100 to 200 *cc.* of a clear bright-yellow liquid, containing only a few white flakes of a paraffin-like body, is obtained in the condenser. The distillate, which contains, besides, a small quantity of brown tarry matter, and some acids (chiefly acetic), is filtered and shaken 2 or 3 times with ½ volume of ether. The peculiar coloring matter, as well as some of the acids, are taken up by the latter; the ether having been evaporated off, a continuous current of air is passed through the contents of the flask, standing on the water-bath at a temperature of 40–50° C. (104–122° F.) for 1 or 2 hours, until all odor of acetic acid has disappeared. There remains now a tough, transparent, but slightly brown-colored mass. This is macerated for several hours with 10 to 20 times its volume of cold water, whereby another small quantity of tarry matter is separated. The clear faintly yellow liquid now contains the coloring matter in tolerable purity and quantity. To prevent its alteration, the liquid is mixed with several times its volume of alcohol and kept in well-closed vessels.



Lux's Apparatus for producing Flavescin.

On adding a few drops of this solution to 50–100 *cc.* of water, and then a small quantity or trace of an alkali, the liquid assumes an intense and pure yellow color.

On account of this property the author has named the substance provisionally *flavescin* (fr. the Latin *flavus*, yellow); he will endeavor to isolate and to study the substance in the future.

Flavescin, dried at 40–50° C., appears in form of a tough, transparent, light-brown mass, easily soluble in water, alcohol, and ether. These solutions, even if only moderately dilute, are almost colorless.

Flavescin forms intense yellow compounds with soda, potassa, and ammonia, which are formed even with very minute quantities. The yellow color is easily recognized also with artificial light. Dilute aqueous or alcoholic solutions of flavescin and its yellow compounds remain unaltered on exposure to air or on boiling, but very concentrated aqueous solutions are gradually decomposed.

The *carbonates* of the alkalies also produce a yellow color with flavescin, being decomposed by the latter into flavescin compounds and into bicarbonates. But *bicarbonates* of the alkalies are *not decomposed* by flavescin: this is shown

by the fact that compounds of flavescin with alkalies, or their carbonates, are rendered colorless by supersaturating with carbonic acid. These reactions take place somewhat slowly in aqueous, but more rapidly in hydro-alcoholic solution, and almost instantaneously in pure alcohol.

The flavescin compounds are probably decomposed by *all* acids; at all events they are completely discolored by sulphuric, nitric, hydrochloric, and oxalic acid, and by fatty or pinic acids. The quantity of acid or alkali required to produce the reaction is very small; for a quantity of liquid measuring 100–200 *cc.*, a single drop of a $\frac{1}{2}$ normal, or 2–3 drops of a $\frac{1}{10}$ normal solution is sufficient.

The above properties permit the use of flavescin as indicator in the following processes:

1. All alkalimetric and acidimetric determinations.

2. The determination of caustic alkalies and bicarbonates, in presence of simple carbonates.

3. The determination of carbonic acid in all mixtures and compounds.

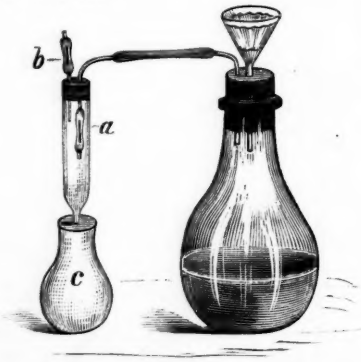
The application of the indicator in the titration of caustic alkalies and acids requires no further explanation. In the case of simple carbonates, these are decomposed by an excess of acid, the carbonic acid gas is expelled by boiling, and, after addition of the reagent, titrated back with standard ($\frac{1}{10}$) alkali.

To understand the application of flavescin in the other cases it is necessary to remember the following: On adding an acid to an aqueous solution of a simple alkaline carbonate, one molecule of acid reacts with one molecule of the carbonate to form a neutral salt and free CO_2; the latter combines with the excess of carbonate and forms bicarbonate. Hence, as soon as *one-half* of the acid necessary for complete decomposition is added, the solution contains equal parts of neutral salt and bicarbonate, both of which are without effect on flavescin. But on adding a further drop, the neutralization of the alkali combined with the flavescin destroys the yellow color. For this reason it is recommended to add at once an excess of acid, and to titrate back, with alkali, until the yellow color reappears. The excess of acid thus added decomposes a portion of the bicarbonate into neutral salt and free CO_2, which latter remains in solution (and for this reason the solution should contain only about 2.5 to 5 gm. in $\frac{1}{2}$ liter), and which prevents, during the subsequent addition of standard alkali, the reappearance of the yellow color, until it has again formed a bicarbonate. The next drop of alkali then reproduces the yellow tint.

From the preceding are derived the following rules, which are explained at length in the author's paper, but which may be readily understood by those who are accustomed to volumetric determinations:

1. *Mixture of caustic alkali and carbonate.*—This is first titrated direct, at common temperature. Suppose that x cc. of acid were used. Then it is saturated with acid, boiled (or rather supersaturated, boiled), and titrated back with alkali. Suppose that y cc. of acid represents the amount required altogether. Then $2(y\text{-}x)$ corresponds to the amount of acid required for the carbonate, and $y - 2(y\text{-}x)$ corresponds to the amount of acid required for the caustic alkali.

2. *Mixture of carbonate and bicarbonate.*—Process the same. Supposing that x cc. of acid were used at first, and y cc. of acid altogether, then $2x$ corresponds to the simple carbonate, and $y - 2x$ to the bicarbonate.—*Zeitschr. f. anal. Chem.*, 1880, 457.



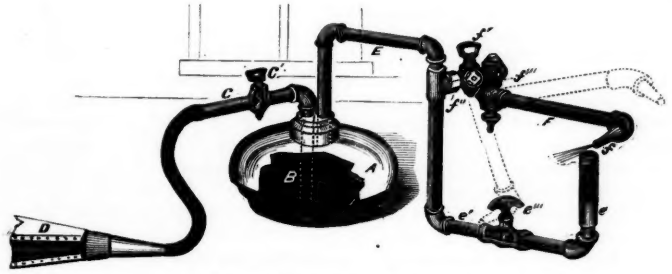
Improved Rapid Filtering Apparatus.

On page 272 of our last volume, we gave an illustration and description of a compact and simple arrangement for effecting rapid filtration, devised by D. A. Partridge, and published in the *Amer. J. Pharm.* The *Pharmaceutische Centralhalle* (of Oct. 21st), in republishing this article, at the same time suggests a modification of the apparatus, which is calculated to make it still more handy. Our readers will please compare the present illustration with that given previously. *C* is a rather thick-walled rubber bulb, or rubber ball, into which is fitted a tube *a*, of the shape of a test-tube, drawn out to a narrow tube below (chloride of calcium tube, etc.). The upper orifice is closed with a doubly perforated cork, through which pass two well-fitting glass tubes (see figure). Upon one of these tubes, *below* the cork, there is slipped a piece of rubber tubing *a*, closed at its other end with a piece of glass rod. A similar rubber tube with rod is slipped over the end of the other glass tube *above* the cork. Both pieces of rubber tubing are provided with longitudinal incisions near the middle, which must be made with a very sharp knife, so that the edges of the cut may lie closely together. On compressing the rubber bulb, the air contained within it is forced out through the slit in the rubber tube at *b*, and on releasing the

bulb it aspirates air from the flask through the slit in the rubber tube *a*. The partial vacuum thus produced in the flask causes the rapid passage of the liquid through the filter. The latter must, of course, fit closely to the funnel, and should be strengthened at the point by a small additional filter.

A New Blow-Pipe.

THEODORE C. STEVENS, of Galesburg, Ill., is the inventor* of a blow-pipe, in which use is made of the light petroleum products for carbonating air, in order to produce a flame; thus dispensing with the employment of ordinary illuminating gas, alcohol, or the like. It consists of some apparatus (D) for producing a blast of air and a vessel or reservoir (A), holding a sponge or similar substance (B) saturated with any light hydrocarbon oil in such condition that air may readily be forced through it without taking up any considerable portion of oil, and a pipe C, provided with a stop-cock C′, and best made of flexible material as a matter of convenience. E



Stevens' Hydrocarbon Blowpipe.

is a pipe leading from the reservoir, and should be on a level with the bottom of the reservoir, so as to serve as an additional support for the apparatus. One essential feature of the blow-pipe consists of the division of this tube into two branches, so arranged with movable joints as to permit a part of the body of carbonized air to be driven through a contracted nozzle against the flame caused by igniting the mixed air and hydrocarbon vapor issuing from the other branch. Stop-cocks are provided for regulating the flow of air and vapor through the branch pipes, and when operated properly the apparatus is claimed by the inventor to produce an intense heat with no smoke, with almost an entire absence of luminous flame and at a very small cost.

On the Detection of Amylic Alcohol (Fusel Oil) in Spirituous Liquids.†

AMYLIC alcohol occurs to a greater or less extent in many varieties of commercial alcohol, especially those obtained by the fermentation of grain or potatoes. To its presence in recently manufactured whiskey, the deleterious effects of the raw spirit are attributable. On keeping, the amylic alcohol is more or less destroyed by oxidation and conversion into comparatively harmless ethers.

The actual proportion of amylic alcohol present in different varieties of whiskey is very uncertain, but few accurate experiments having been made. According to Dupré, a sample of Scotch whiskey contained 0.19 of amylic alcohol for 100 of ethylic alcohol. A sample of "Cape Smoke" contained 0.24, and of "Common Samshoe," 0.18 of amylic alcohol per 100 of ethylic alcohol.

The alleged adulteration of whiskey with fusel oil is probably based on an error, though it is quite possible that it has occurred in exceptional cases. The natural variation in the proportion of amylic alcohol contained in spirit is very considerable, being materially affected by the mode of distillation, in addition to the causes previously mentioned.

Of the many methods of detecting amylic alcohol in spirituous liquids, comparatively few have any value. The following have all been tried by the author, and verified to the extent stated.

1. A useful rough test is to pour the sample of spirit on filter-paper contained in a plate or flat basin, allowing it to evaporate spontaneously, or by the application of a very gentle heat. In the last portions the smell of fusel oil is often distinctly recognizable, especially if the liquid be warmed. A sample of gin, to which $\frac{1}{2000}$ of amyl alcohol had been added, was found by the author to respond to this test.

2. Another useful indication is afforded by dissolving 1 gram of caustic potash in 150 cc. of the spirit, evaporating the liquid slowly down to 15 cc., and then mixing it with an equal measure (15 cc.) of dilute sulphuric acid, when the liquid will exhale an odor which is often characteristic of the origin of the spirit, and indicative of its source in raw grain, malt, potatoes, rye, arrack, etc. The odor produced is often very disgusting.

*Patent No. 233,951, Nov. 2d, 1880.

†Abstract from Alf. H. Allen's Introduction to Commercial Organic Analysis (8vo, London, 1880). Printed as answer to Query 847.

3. A valuable means of concentrating the fusel oil is to distil off the greater part of the alcohol at as low a temperature as possible. In the residual liquid the fusel oil may often be detected by the smell, especially while it is warm. The residual liquid is mixed with an equal measure of ether, and then well shaken. If the ethereal layer do not separate spontaneously, an equal measure of water should be added. The ethereal layer is removed with a pipette, and allowed to evaporate spontaneously. In the residue, amylic alcohol may be recognized by its smell and chemical characters. Very volatile petroleum spirit may sometimes be advantageously substituted for the ether, as, owing to its slight solubility in alcohol, it may often be applied to the original liquid.

Betelli directs the dilution of 5 cc. of the spirit with 6 or 7 volumes of water, 15 or 20 drops of chloroform being next added, and the whole shaken strongly and allowed to stand. The deposit of chloroform is then collected and allowed to evaporate spontaneously. By pouring the mixed liquid through a wet filter, the author found he could get rid of the ordinary alcohol and water, while the amylic alcohol was retained by the chloroform, which rapidly evaporated and left the fusel oil in a state readily recognizable by the smell. The amylic alcohol in a gin, to which $\frac{1}{2000}$ had been purposely added, was readily recognized by the author, both by the use of ether and of chloroform.

The amylic alcohol having been separated from the ethylic alcohol by one of the above solvents, it may be subjected to tests of identity. Among these the best are the following: 1. Amylic alcohol, when warmed with 1½ to 2 times its volume of strong sulphuric acid, is converted into amyl-sulphuric acid ($C_5H_{11}.HSO_4$), with production of a red color. This acid is viscid, soluble in water and alcohol, and decomposed by distillation. In presence of sugar or other fixed substances this test is fallacious; but if applied to a product of distillation, especially if boiling between 120 and 125° C., the production of even a faint red color is strong presumptive evidence of the presence of fusel oil. 2. When heated with an acetate and sulphuric acid, amyl acetate is formed, of the odor of the jargonelle pear. In presence of one-thirtieth of ethylic alcohol, the odor produced is that of the bergamot pear. 3. On heating amylic alcohol with oxidizing agents, as sulphuric acid and bichromate of potassium, an apple-like odor of valeric aldehyde is first noticed, and afterwards the strong and characteristic smell of valerianic acid, which may be separated by distillation. In presence of much ethylic alcohol, the odor of the resultant acetic acid quite overpowers the valerianic acid. The sulphuric acid reaction is valueless in presence of sugar, and should, therefore, be applied, when practicable, to a product of distillation.

The determination of fusel oil in spirits can only be effected very roughly. Such a result may be obtained by the application of the foregoing methods of concentration and extraction. An accurate determination is not to be expected, as fusel oil is not a definite substance, but a very variable mixture of amylic, butylic, and other alcohols, various amylic ethers, etc.

1. A process, based on the determination of the amylic alcohol, has been devised by Dr. Dupré, and is carried out as follows:

An amount of spirit (previously distilled if necessary) containing 1 to 2 grams of alcohol is oxidized in a closed flask with 100 cc. of a chromic-acid solution containing 10 gm. of bichromate of potassium and 20 gm. of sulphuric acid. The latter having been added to the former, the flask containing the mixture is securely closed with an India-rubber stopper, tied down, and suspended in a bath of boiling water for two hours. After cooling, the flask is opened, and sulphuric acid and granulated zinc added to reduce the excess of chromic acid. The green liquid is then distilled, and when nearly dry, water is again added, and the distillation repeated. The acid distillate is then neutralized with normal solution of soda, the solution evaporated to a small bulk, and transferred to a retort. An amount of normal sulphuric acid equal to one-twentieth of the normal soda previously employed is next added, and the contents of the retort distilled to dryness, on an oil-bath, at a temperature of about 130° C. Another addition of acid to the same extent as before is now made, some water added, and the distillation repeated. It is well to distil to dryness once or twice more with water only. The acid distillate contains all the valerianic, butyric, and other acids producible from the fusel oil present in the spirit, the greater part of the acetic acid resulting from the oxidation of ethyl alcohol remaining in the retort as sodium acetate. The distillate is next neutralized by boiling it with pure precipitated barium carbonate,* filtered, evaporated to dryness, the residual barium salts dried at 130° C., and weighed. By subsequently converting the product into barium sulphate (by moistening the residue with sulphuric acid, and again igniting), the necessary data for ascertaining the proportion of amylic alcohol are obtained. From the composition of the mixed barium salts thus ascertained, the proportion of amylic and ethylic alcohols may be calculated by the formula $Bx = 100P + bx - 100b$, in which x is the percentage of the *lower*† fatty acid in the mixed barium salts obtained, P the % of barium sulphate yielded by the mixed barium salts on treatment with sulphuric acid,

* The barium carbonate may be advantageously replaced by using a slight excess of baryta water, then passing carbonic acid, and boiling well.

† *Lower* and *Higher* here mean "having a lower or a higher molecular weight."

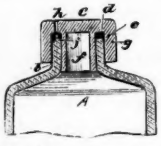
B the % of $BaSO_4$ theoretically obtainable from the pure salt of the lower fatty acid, and *b* the same from the higher fatty acid. Of course, by the fractional saturation of the alkali by sulphuric acid, an amount of acetic acid equivalent to nine-tenths of the total normal alkali used was retained in the retort. This additional amount must be calculated into ethyl alcohol.

60 parts of acetic acid correspond to 46 of ethyl alcohol.
102 " valerianic " 88 " amyl "

2. When the proportion of fusel oil is considerable, the amount may be approximately ascertained by distilling 500 or 1,000 cc. of the spirit. When the thermometer rises to 98° C. the receiver is changed, and the portion distilling between that temperature and 110° C. collected separately and again fractionally distilled. The last portion so obtained is added to the part of the first distillate, coming over between 110 and 135° C. These united distillates are set aside; after the first hour or two, if no aqueous layer separates at the bottom, one-fourth of the volume of water is added, and the whole agitated. After twelve hours the aqueous layer is removed with a pipette, and the residual fusel oil weighed. During the distillation the temperature should be carefully watched, and not allowed to much exceed 135° C., or the distillate may be contaminated with empyreumatic products. This process aims at the direct determination of the fusel oil as such, instead of the estimation of any leading constituent. Probably the method might be advantageously modified by agitating the fusel oil distillate in a graduated tube with an equal volume of benzin or petroleum spirit, and estimating the amount of fusel oil from the increase in the bulk of the upper layer.

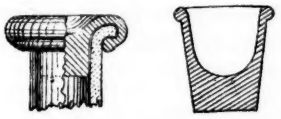
New Bottle-Stoppers.

WILLIAM W. STEWART, of Brooklyn, N. Y., has invented a stopper* which is intended to obviate the difficulty often experienced in stopping bottles that are full without forcing out a part of their contents, owing to the pressure exerted upon it by the descending stopple. This is especially troublesome in the case of ink bottles, perfume bottles, etc. In the stopper here shown a channel *e* is provided for the reception of the lip of the bottle, and this communicates with the interior of the bottle by means of a small opening; and a similar opening, *h*, either lateral or vertical, opens outwardly, thus allowing the air to escape up to the moment when the stopper is fully "seated," when the communications are at once closed. This arrangement admits of its application to either friction or screw stoppers. By slightly loosening such a stopper a passage is left through which fluids may escape, as in the case of what is known as a "sprinkler stopper," used for perfumes. The fact that this stopper is made to fit closely to both the inner and outer surfaces of the neck insures a closer sealing of the contents than is the case when the ordinary stopper is employed.



* Patent No. 234,342, of Nov. 9th, 1880.

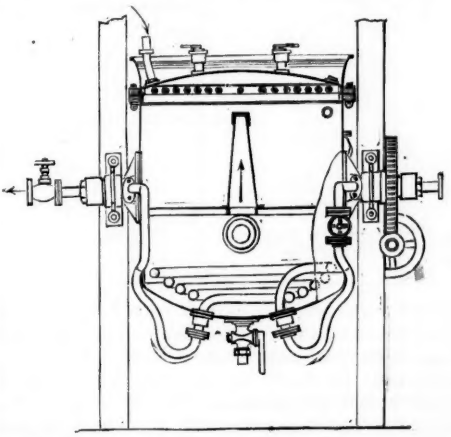
MR. U. G. ROUMILLAT, of Florence, S. C., is the patentee of a handy measuring stopper, which possesses also the advantages of a safety-cap. The illustration shows a sectional view of the stopper and the mode of converting it into a safety-cap when used with fluids of a corrosive



nature. It is made of vulcanized rubber, in various sizes, and as a measure varies in capacity from a drachm upwards. There are numerous occasions in which a stopper of this nature will be of service, and pharmaceutists might do well to keep a supply of various sizes on hand.

A New Water Extraction Apparatus.

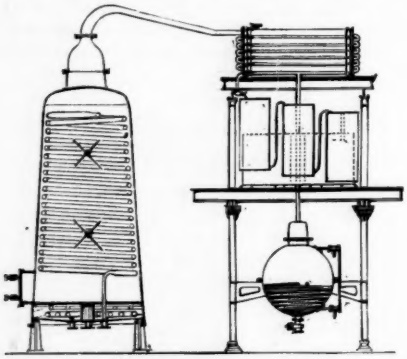
V. HÆNIG and O. REINHARD are the patentees (Germ. Pat. 10,771) of a new form of extraction apparatus, which is illustrated by the accompanying cut. The substance to be exhausted is introduced into the upper space of the still, and the cover is then securely fastened on. This cover is so constructed that cold water circulates both above and below, and thereby keeps it constantly cool. When everything is ready, steam is admitted to the valve seen at the right by a flexible hose, through an opening into the upper part of the boiler, where it thoroughly penetrates the mass, and on coming in contact with the cold cover condenses to water, and falling upon the substance gradually extracts



the latter, and finally collects in the lower part of the boiler. As soon as a sufficient quantity of liquid has collected, which may be observed through a circular window, the steam is turned off from its connection with the upper part of the boiler, and a valve opened, which conducts it through a coil in the lower part of the boiler, heating the liquid to boiling and keeping up the alternate conversion into steam and water until the substance is completely exhausted. The openings in the cover, are, respectively, a safety-valve and a valve for admitting air, when the operation is completed.—*Dingler's Polyt. Journ.*, Vol. 238, 332.

Improved Apparatus for Distilling Essential Oils.

THE well-known firm of Schimmel & Co., of Leipzig, have patented an improved apparatus for distilling volatile oils (Germ. Pat., 10,288). The tall conical column at the left is the still. About eight inches from its bottom is a perforated diaphragm, or false bottom, upon which the seeds, herbs, or other material to be distilled are placed or heaped, by introducing them through the still-head. A perforated coil below the diaphragm projects steam upwards through the mass, which is occasionally agitated from without by means of the horizontal stirring apparatus indicated by the two crosses. Any con-



densed water which may run back is converted into steam by the heating coil at the bottom. Meanwhile the mass itself is heated by a long coil lining the body of the still, and carrying steam at a high pressure. Whatever of essential oil is carried forward by the steam, passes through the still-head into the cooler on the right, where both oil and steam are condensed, and from where they flow (through a small funnel-tube) into three successive receivers, which are arranged like Florence flasks, and which retain the essential oils that have separated. From the last receiver the water, which is still impregnated with oil, enters another reservoir, shown in the cut only by dots, and from there it flows into a small globular still, situated underneath, in which, by means of steam, nearly all the oil still retained is again volatilized with the steam of water, and both again conducted to the cooler.—From *Dingler's Polyt. Journ.*, Vol. 238, 428.

A new Method of filling Ice-houses.

Now is the time for making provision towards the summer of 1881 in the matter of ice. During the past season the price of this indispensable commodity has ruled so high that the profits of many pharmacists, from the sale of carbonated beverages, were either entirely swallowed up, or at least very largely reduced. We had occasion, in one of our earlier numbers of 1880, to point out that a *co-operative* system of providing ice for the use of pharmacists, confectioners, etc., might possibly offer great advantages, and form a solution of the difficulty. There is no need of a large number to form such a corporation, nor is there any necessity for a large ice-house. But it strikes us that, if the pharmacists, etc., doing business within certain given limits were to take concerted action and provide ice-house of their own, they would reap ample benefits therefrom.

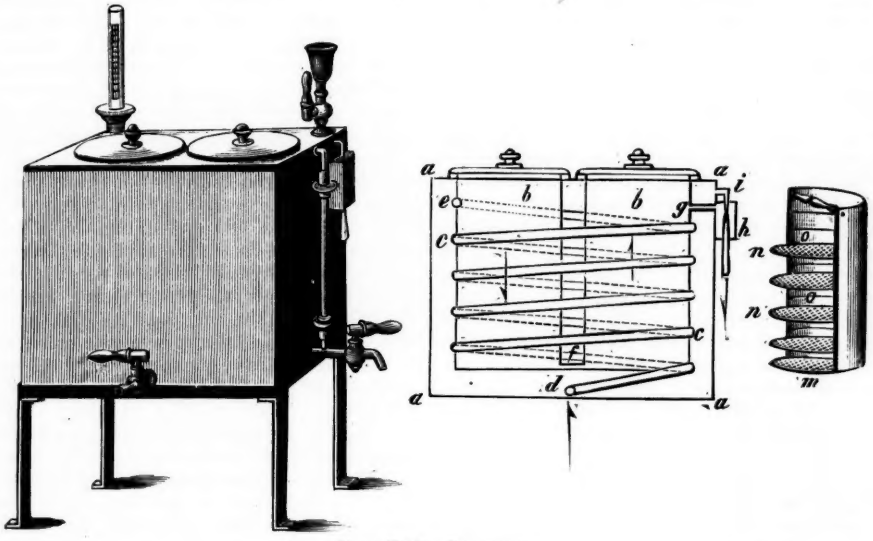
It is not unlikely that, if this plan is carried into effect, the supply of ice will be drawn from the natural sources of the vicinity, where it has been customary heretofore to gather it, or else that it be brought in vessels from higher latitudes. Still, there is now said to be another method of filling an ice-house, which forms the subject of the German Patent 11,033, and which may possibly (?) turn out to be feasible. This patent requires that an ice-house be built which shall, when the doors, etc., are closed, be perfectly water-tight. During cold weather it is to be filled with water, by means of a pump. All the skylights and traps in the roof are then to be opened so that the cold air may exert its influence upon the water and cause it to freeze on the surface. As soon as the crust is about 1 cm. in thickness, the exit-pipe is closed and some of the water below the crust is pumped up upon the surface of the ice already formed—not more, however, than will be readily frozen within a short time. The withdrawal of water from below and the addition of water above causes the first and each subsequent crust of ice to sink down, until at last the whole of the water has been pumped up and the whole ice-house is filled with a solid cake of ice. We are not aware of any experience that has been had with this method, and would caution our readers against undertaking it on a scale of any magnitude. The expense of constructing a water-tight structure, such as is demanded, is very considerably greater than that of a rough-board affair needed for the preservation of ice gathered in the usual way.

Where the winter is not cold enough to make thick ice, a considerable amount can be collected by exposing water in thin layers in shallow pans which are protected from wind, but are open above to allow of radiation of heat.

Steam Drying Apparatus with Continuous Draft of Warm Air.

THE object of this apparatus is to warm at the same time two cylindrical drying compartments, and to generate a continuous draft of warm air in the pipes surrounding the drying cylinders, as well as in the latter themselves.

The square box *a*, which is hard-soldered, contains two cylindrical compartments, *b b*, into each of which a movable set of drying-shelves *n n*, held together by a frame, *m*, fits, and each of which may be covered air-tight by a ground lid. The two cylinders are surrounded by a coil of lead-pipe, which enters the box at *d*, being provided with a faucet on the outside, and after winding several times around the cylinders, opens into the upper part of the left-hand cylinder, at



Steam Drying Apparatus.

e, where it discharges the air heated in its passage through the tube. From the left cylinder the heated air passes through the communicating pipe *f* into the right cylinder, and finally passes out at *g*. The current of air is, however, greatly hastened by the ingenious attachment of a steam-injector, delivering a jet of steam through *a* and *i* into the outlet-pipe *h*, which jet pulls along with it a rapid current of heated air. Upon the upper surface of the box is attached a funnel-faucet for replenishing the water, and an opening for the insertion of a thermometer. At the side is attached a water-gauge, and a faucet for letting off the water. The box rests on a square iron support. This apparatus is invented and manufactured by Dr. Robert Muencke, Berlin, N. W., Luisenstrasse 58. Price of a complete apparatus, containing drying cylinders, 11 cm. wide and 23 cm. deep, 75 marks (= $18.00).—*Pharm. Centralhalle*, 1880, 123.

The Commercial Analysis of Cinchona Barks.

THE immense mass of writing on this subject places the analyst, seeking a good commercial process, much in the position of the patient who was killed by having too many doctors. Having, however, had occasion to study every proposed method from time to time, and being often asked for informatiom, I now take the opportunity of laying before our readers the actual process which I find best in practice, and which I have modified from those originally proposed by De Vrij and Moens.

As to the actual extraction of the crude material I will say nothing, except to state that, of the published processes, the extraction of the bark (previously mixed with milk of lime and dried) by successive portions of methylated spirit of 93 per cent, and then converting into sulphates and distilling off the alcohol, is the best, provided the alcohol is only strong enough (which may be cheaply attained by placing a quantity of freshly ignited potassium carbonate in a bottle of the strongest methylated spirit sold), and the bark and spirit are boiled together under an upright condenser. Bark analysts have generally an extraction process, which they keep secret, suitable to the method used by the chief manufacturers for whom they work; and I do not mean to infer that I, in practice, always use the extraction mentioned, but I say it is the best published process.

Suppose, therefore, that the bark has been extracted and the alkaloids obtained as sulphates in solution, I begin by the very old method of adding to a very concentrated solution—a distinct excess of sodium hydrate, and shaking out with 50 cc. of chloroform, and then successively

with three quantities of 25 cc. each. This I find will bring back invariably 5.99 out of 6 grams of pure mixed alkaloids, and is decidedly the most accurate method, given practice in the way of shaking, etc., so as to get the chloroform to settle quickly. The chloroform should be received into a small tared, five-ounce squat beaker, placed under a Wynter Blyth's recovery apparatus, and the residue dried in the bath at 212°, and then heated in the air bath to 240° F., and the fused mass weighed.

The total alkaloids are then dissolved in absolute alcohol, and the solution divided into two equal portions by weight, and treated as follows:

Portion A is placed under a burette containing volumetric sulphuric acid (11.6 grms. acid of 1,843 sp. gr. in one liter of water, each cc. which = 0.1 gram crystallized sulphate of quinine) and titrated until just faintly acid to delicate litmus paper, and the acid used is noted as a guide for future operations. The spirit is then evaporated off, and the residue is dissolved in water at 185° F., using 5 cc. of water for each cc. of volumetric acid taken, and if not all soluble, then volumetric acid is to be dropped in until all is dissolved. The whole being still kept at 185°, very dilute sodium hydrate (4.74 NaHO per liter) is to be cautiously added, stirring well, until the whole is just all but neutral. The amount of volumetric acid used to dissolve over that required at first to titrate, will be an index of the soda required, because the solutions are to be made to balance each other. The whole is now rapidly cooled to 60°, and kept at that point for an hour, and then filtered through a pair of filters previously mutually counterbalanced, and the filtrate received into a graduated cc. measure. The crystals are washed with 1.5 cc. of water at 60° for each cc. of acid used in the titration, and when drained, well pressed, and dried first at 212°, and then gradually up to 240° and weighed, using the outer filter as a tare. The filtrate and washings are measured, and 0.000817 added to the weight of crystals of quinine sulphate, for each cc. of the fluid. If the last drops of water running from the crystals are still acid, then the funnel must be placed over an empty beaker, and the washing continued with saturated solution of quinine sulphate at 60° F. till all free acid is washed away, as, if not, the crystals will char in drying.

Portion B is rendered just acid with hydrochloric acid, the spirit evaporates off, and the residue dissolved in the least possible quantity of water at 100° F. Dilute soda is added to neutralization, and then excess of saturated solution of Rochelle salt, and the whole cooled to 60° for an hour with frequent stirring. The precipitate is collected on a pair of mutually counterbalanced filters, washed with say 100 cc. of water at 60°, and the filtrate and washings received into a measure. The precipitate is dried at 220° and weighed, using the outer filter as a tare, and 0.00083 is added for each cc. of filtrate. The quinine sulphate previously found is multiplied by 0.915, and the product is deducted from the weight of the mixed tartrates, and the balance multiplied by 0.804 gives cinchonidine. The filtrate from the tartrate is concentrated to its original volume, cooled, rendered just faintly acid by a drop of dilute acetic acid, and excess of saturated solution of potassium iodide is added with constant stirring. After an hour or so at 60° it is collected like the cinchonidine, and treated in every respect the same, and weighed, and the weight, after adding 0.00077 for each cc. of filtrate and washings, is multiplied by 0.7168 and the result is quinidine.

The filtrate from the quinidine is made distinctly alkaline by sodium hydrate, and the precipitated cinchonine and amorphous alkaloid are filtered out in a similar manner, washed and weighed. The precipitate is then treated with spirit of 40 per cent to dissolve out the amorphous alkaloid, and again weighed, and the difference is amorphous alkaloid, while the last weighing is cinchonine. This is the worst separation in the whole process, but as cinchonine is the least valuable alkaloid it is not of any great consequence. The weight of the cinchonine and amorphous alkaloid together must have deducted from it 0.00052 for each cc. of the filtrate from the quinidine hydriodide, and 0.00066 for each cc. of filtrate from the cinchonidine tartrate, and the balance is then the true weight, which, minus the amorphous alkaloid, gives the cinchonine.

The process is very expeditious, both portions going on at once, and the whole can be done in six hours. Of course, like all others, it requires experience, especially to see that the neutralizations are carried to the extreme point, and the quantities of water properly judged, but, given that, I have frequently got back with it 99 per cent of mized pure alkaloids, and for Indian barks it works very well indeed. There is nothing special in the actual separations, but only in the general manner of working, and the saving of time by using the two solutions, and in the collection on double filters so as to compensate the amount of solution absorbed in every case, and in the allowances which are not, perhaps, exactly theoretical, but what I have practically found the best. No allowance is mentioned for the solubility of cinchonine because it is very slight and not important. The allowance on the first step of B is a practical one, based upon a usual sort of mixture of quinine and cinchonidine, but is to be modified according to the quinine found in part A. In practice, however, it is usually close enough.—JOHN MUTER, M.D., etc., in *The Analyst*, 1880, 223.

Mark Twain says there is something very fascinating about science—it gives you such wholesale returns of conjecture for such trifling investments of fact.

[Is it possible that he can have been reading some of the recent writings on "sewer-gas?"—ED. N. R.]

RECENT PAPERS.

Synthesis of Atropic Acid.—(A. LADENBURG and L. RÜGHEIMER.) The masterly researches of Prof. Ladenburg, on the constitution of atropine and other solanaceous alkaloids, have repeatedly been mentioned in this journal. In our vol. for 1879, p. 231, will be found a record of the successful synthesis of atropine from its products of decomposition, namely tropic acid and tropine. It was only required now to find a method of producing both of these latter bodies artificially, and at that time already, Prof. Ladenburg announced that he expected to solve the question. On page 2,041 of the *Berichte der Deutsch. Chem. Ges.* (issued Nov. 22d, 1880) the successful synthesis of tropic acid is now announced.

Atropine has the composition $C_{17}H_{23}NO_3$. When this is heated with hydrochloric acid, or with baryta, it takes up one mol. of water, and is converted into a new alkaloid tropine $C_8H_{15}NO$, and tropic acid $C_9H_{10}O_3$ (both of which were successfully recombined, by Ladenburg, to atropine). It had previously been ascertained, however, that, if the decomposition of atropine, with baryta, is conducted at a temperature of 130° C., or if hydrochloric acid is allowed to act upon it, for several hours, at the same temperature, the tropic acid is itself deprived of 1 mol. of water, and is converted into $C_9H_8O_2$, which received the name of atropic acid, and into an isomer of the latter, of the same composition and termed isatropic acid. In a previous communication, Prof. Ladenburg has shown that hydratropic, atrolactic, atropic, and tropic acids may be successively converted one into the other, and, to accomplish the synthesis of tropic acid, it only remained now to produce one of the three first-mentioned acids artificially.

The particular acid which Ladenburg succeeded in producing, is atrolactic acid. He started from dichlorethylbenzol $C_6H_5.CCl_2.CH_3$, which can, itself, be formed artificially. By treating with cyanide of potassium and alcohol, two carbon nuclei were introduced, producing $C_6H_5.C.CN.C_2H_5O.CH_3$, while chloride of potassium and hydrochloric acid were eliminated. The cyanogen nucleus was decomposed by treatment with barium hydrate, whereby ammonia was eliminated, and by treatment with hydrochloric acid, separating with ether and final warming with carbonate of sodium an ethylated atrolactic acid was obtained. This was easily converted into atropic acid by boiling with 50 parts of concentrated hydrochloric acid.

It now only remains for Prof. Ladenburg to succeed in accomplishing the synthesis of tropine, and, so far as we know, there is a good prospect of his success.

Ammoniacal Glycyrrhizin.—CONNERADE directs this to be prepared in the following manner: Macerate ground licorice root with one and a half parts by weight of water, strain, wash the residue with a very small quantity of water, heat the mixed liquids to boiling to coagulate albumen, strain again, and then add diluted sulphuric acid (1 in 10), as long as a precipitate is produced. Let this settle, decant the liquid, and dissolve the precipitate in solution of ammonia, diluted with nine parts of water. Filter the latter and evaporate it to dryness. The compound then remains as a brown, friable varnish, unaltered by air, of a pure, sweet taste, easily soluble in cold water, and imparting to the latter, even when diluted to 1 in 1,000 parts, an amber color. The yield is about 10 per cent of the weight of the root.

Preparation of Soluble Starch by means of Glycerin.—(K. ZULKOWSKY.) The author has found that, if starch be heated with glycerin to 190° C. (= 374° F.) and then poured into water, the latter retains all the starch which has been rendered soluble, while the insoluble portion subsides. He directs to mix intimately about 60 grams of starch with 1 kilo of concentrated glycerin, in a porcelain capsule, and to heat, under constant stirring. At first the starch cells swell up; after a while vapor of water is given off, and, when the temperature has reached about 130° C. (= 266° F.), the mass becomes so thick that it is difficult to stir. It now appears as a tough, transparent substance. On further heating, the consistence becomes softer, and at about 170° C. (= 338° F.) the whole appears thin fluid. The starch is now in solution, and the bottom of the capsule may be plainly seen through the liquid. If the heat is raised to 190° C. (= 374° F.), until dense vapors are given off from the glycerin, the starch has been converted, more or less, into the soluble modification. On allowing the glycerin solution to cool, the mass becomes more dense. If it be poured, while hot, into water, any starch which has remained insoluble separates as jelly or paste, and, from the filtrate, the soluble modification may be obtained by precipitation with alcohol. The above shows that both modifications are soluble in glycerin.—*Ber. D. Chem. Ges.*

Estimation of Nitric Acid in Subnitrate of Bismuth.—BAUDSIMONT has always found, in commercial subnitrate of bismuth, larger quantities of nitric acid than its formula demands. He determines the amount of nitric acid in the following manner: A standard acid is first prepared, containing in 1 liter 9.074 gm. of monohydrated sulphuric acid (of which 1 cc. corresponds to 0.01 gm. anhydrous nitric acid), and also a corresponding soda-solution, containing 7.407 gm. of sodium hydrate per liter.

1 gram of the subnitrate of bismuth to be examined is introduced into a flask, marked at the neck for a capacity of 100 cubic centimeters, 20 cc. of the soda solution are next added with 30 cc. of water, and the whole boiled for ten minutes. The flask is then rapidly cooled to 15° C. (= 59° F.) by immersion in cold water, filled up to the mark with water, and the liquid, after being uniformly mixed, filtered through a small filter. 50 cc. of the filtrate are introduced into a porcelain capsule, and, after the addition of solution of litmus, titrated with the sulphuric acid. The amount of nitric acid present is calculated from the number of cubic centimeters of sulphuric acid lacking from 50 cc.—*Journ. de Ph. et Ch.*

The editor of the *Pharm. Zeitschr. f. Russland* correctly remarks that the above method is not new, but still deserves to be again noticed. He also adds that the oxide of bismuth should be collected upon a tared filter, then dried and weighed, so that if the quantity of acid present is found normal, it may be ascertained whether a portion of it has not been in combination with ammonia.

Detection of Iodine in Bromine and Metallic Bromides.—(A. JORISSEN.) A few drops of the bromine in question are placed in a small porcelain capsule, 30 cc. of a solution of potassium chlorate, saturated in the cold, are added, and the liquid is boiled till colorless. The solution is then poured into a test-tube, allowed to cool, mixed with a few drops of a solution of morphine sulphate and a little chloroform. If the chloroform takes a violet color, iodine was present in the sample. The morphine solution is prepared by dissolving 0.5 gm. morphine in an excess of dilute sulphuric acid, and diluting to 50 cc. In examining potassium bromide, the solution is mixed with 2 or 3 drops of pure bromine water, and a few cc. of a cold saturated solution of potassium chlorate, and further treated as above.—*Zeitsch. f. anal. Chem.* and *Chem. News*, Dec. 23d.

Detection of Alcohol in Essential Oils.—(A. DRECHSLER.) The author employs as reagent a solution of 1 part potassium bichromate in 10 parts nitric acid of sp. gr. 1.30. Alcohol, if present, is at once betrayed by the pungent odor of ethyl nitrite.—*Zeitsch. f. anal. Chem.* and *Chem. News*, Dec. 23d.

Chlorate of Potash is recommended by DR. A. HARKIN, in the *Brit. Med. Jour.*, Oct. 30th, as a remedy for the hemorrhagic diathesis. He reports four cases: one of nose-bleed, another of hæmaturia, a third of purpura, and a fourth of menorrhagia. In each case, the chlorate was used in connection with tincture of the chloride of iron.—*Med. and Surg. Rep.*

Iodoform.—Dr. H. C. Howard suggests an ingenious method of applying this remedy to the uterine cavity in cases of catarrh. Mix a half drachm of iodoform, in fine powder, with an ounce of cacao butter, and keep it in a shallow ointment jar. Procure a thin silver tube about one-fifth inch in diameter and eight inches long, with a closely-fitting piston. When an intrauterine suppository is needed, withdraw the piston for a short distance, and fill the open end of the tube by plunging it forcibly into the material in the jar. The mass can then be compressed, if need be, with the piston. By passing the end of the tube into the cervical canal, and pushing on the piston, the suppository can be placed in contact with the catarrhal surface, and it there melts readily and causes no pain.

The same treatment is very serviceable in gonorrhœa of the male urethra, and in fissure of the female urethra.—*Chicago Med. Rev.*

Oil of sweet almonds is said to serve as a vehicle that will cover the odor of iodoform.

Mineral Waters.—Dr. Prosser James says that the *Aesculap Bitter Water*, of Hungary, is a good, strong, aperient water of the mixed class (sodium and magnesium salts). On boiling, it exhibits an alkaline reaction with phenol-phthalein. It will be found a valuable addition to our purgative waters on account of its purity. Each ½ pint, or 10 ounces, contains 23½ grains of solids, 19½ grains of purgatives, 1½ grains of antacids, and 2 grains of salines.

Mattoni's Royal Hungarian Water, although indorsed by the *Lancet* and the *Medical Times and Gazette*, is not recommended by Dr. James, for the reason that, although belonging to the strong purgative waters of the mixed class, it presents undoubted evidence of containing surface drainage or something equivalent in the form of decomposing organic matter. Two out of three bottles contained *nitrates* and *nitrites*. A third bottle contained only the first named. Ten fluid ounces of this water hold 169 grains of solids, 140 grains of purgatives, 76 grains of salines, and 8 grains of antacids.

The Garden Tulip—(*Tulipa Gesneriana* L.) has been the subject of experiment by Dr. Sidney Ringer, who has employed an alkaloid extracted from its bulb, leaves, and flowers, by Mr. Gerrard, and called by him tulipine; each pound of the plant yielding a grain of nitrate of tulipine. He finds that tulipine differs almost entirely from the action of alkaloids derived from plants belonging to the natural order of Amaryllidaceæ, so far as he has examined. It is a muscle-poison like veratria, but weaker than it. It paralyzes either the cord or afferent nerves, or both—probably the afferent nerves. Its action is slight, if any, on motor nerves. It affects the heart of frogs like veratria, but does not affect the pupil.

Nicotine.—A case of poisoning, with sudden death, is reported by L. L. Dorr, occurring in a cigar-maker 49 years of age, and apparently due to excessive smoking and prolonged presence in a room filled with tobacco smoke. At the autopsy, the description agreed with von Borck's description of the morbid state (*vide* Ziemssen's Cyclopædia), viz.: "The heart is generally empty, and the blood in the vessels is of a dark-red color. The liver, spleen, and kidneys are generally hyperæmic. Vascular engorgements of the brain and its membranes, and serous fluid in the ventricles of the brain, are mentioned in all almost published reports."—*Pacific Med. and Surg. Jour.*, Dec.

Carbolic Acid.—J. R. Sigler reports a case of poisoning, caused by the administration of a tablespoonful of the pure acid. Unconsciousness followed in three minutes. At seven minutes radial pulsation ceased. Between the eighth and twelfth minutes there were tonic spasms, mainly of the flexors. Breathing became stertorous at about the sixteenth minute, and in nineteen minutes the patient died. There was considerable corrosion of the mouth and throat. The patient was a female, 14 years old, and was suffering from a severe burn.—*Louisville Med. News.*

French Gingerbread is said to contain chromate of lead and chloride of tin in place of molasses and honey as a coloring. Drs. Moyner and Galippe have found by analysis that it is made of a certain amount of flour, a great deal of glucose, some carbonate of potash, and a little chloride of tin [? Ed. N. R.].—*Med. News.*

India-Rubber and Gutta-Percha Instruments that have become brittle by exposure to sun-light, as in shop windows, may, it is said, be rendered again flexible by immersion for a few minutes to a half-hour in a mixture of one part of liquor ammoniæ with two parts of water. *Med. Press and Circ.*, Dec. 8th.

It is said that a compound, consisting of nine parts of gutta-percha with one part of camphor can be welded at a temperature of 136° Fahr., and, when cold, is adhesive and elastic.—*Ibid.*

Fool's Parsley (or *Æthusa Cynapium*) is said by Mr. Harley to be harmless, although it has for a long time been counted among poisonous plants (*St. Thomas Hospital Reports*).—*Med. Press and Circ.*, Dec. 8th.

Salicylate of Sodium has been proved, by a series of experiments, to be decomposed by the gastric juice. A quantity of the acid being set free, furnishes the therapeutical agent which is of value.—*Med. Press and Circ.*, Dec. 8th.

Benzoate of Sodium having been tried as a remedy in whooping-cough by Dr. J. S. Hill (of the Clinical Society of Maryland), he found that it did not notably diminish either the frequency or intensity of the paroxysms. It did, however, appear to promptly stop the vomiting which, in some cases, was a serious complication of the disease. Ten grains every three hours was the dose used for children about three years old.—*Med. and Surg. Rep.*

Pilocarpine is said by Dr. Guttman (*Allg. Med. Zeit.*, Oct. 9th) to be a valuable remedy in diphtheria when its sialagogue effect is induced, owing to the softening and solution of diphtheritic membrane which takes place, and the rapid amelioration of inflammatory symptoms.—*Med. and Surg. Rep.*

Pyrogallic Acid as a Substitute for Chrysophanic Acid.—Balmanno Squire, after an extended trial of pyrogallic acid as a substitute for chrysophanic acid in the treatment of diseases of the skin, finds that it falls considerably behind the latter in its value as a remedy, and is not, as Dr. Jarisch, of Vienna, has suggested, equivalent in its effect. Since chrysophanic acid was introduced, it has become so much lower in price that there is now no necessity for resorting to pyrogallic acid as a substitute. We have already reported a case of poisoning following the epidermatic use of the pyrogallic acid—a matter for consideration when the merits of the two drugs are considered.

Dr. J. M. Finny confirms what Dr. Squire says respecting the superiority of chrysophanic over pyrogallic acid and says that he has tried both at the same time on opposite sides of the patient's body, and that in all such test-cases the parts treated with chrysophanic acid recovered soonest.

Chian Turpentine.—After a prolonged and faithful trial of the remedy in a series of cases in the Middlesex Hospital, Mr. Henry Morris, F.R.C.S., declared that no beneficial effects have followed the employment of the drug. In cases that have been benefited by it, other palliative measures, he thinks, might have proved equally serviceable.—*Med Press and Circ.*, Dec. 8th.

The Treasury Department have decided that this drug is subject to a duty of 40 per cent.

Medicinal Plants cultivated in the Nilgiris.—The official report of Mr. A. Jamieson, superintendent of the Government Botanical Gardens, Ootacamund, has been printed in the Ceylon *Observer*. M. Jamieson says: "In addition to jalap (which continues to thrive most satisfactorily), the plants noted are being propagated and planted out as rapidly as poung plants can be produced: Peppermint, rhubarb, rosemary, lavender, digitalis, taraxacum. Of these the most important are peppermint and rhubarb. *Peppermint.*—After fully a year's trial, I have abandoned the cultivation of peppermint at Ootacamund, the climate being too cold to produce a luxuriant growth. The plant grows rapidly during the autumn months, but becomes stunted and withered as soon as the dry, frosty weather sets in. I am, therefore, having the entire stock transferred to the newly-formed nurseries in the Kalhatti garden, where we have a more forcing climate, and an abundant supply of water at command throughout the year. The present year's crop of peppermint will, I believe, yield several pounds' weight of oil when distilled.

Rhubarb.—The stock of rhubarb plants has not, I regret to add, increased so rapidly as I anticipated. The original plant having not yet borne seed, the propagation has in consequence been confined to the division of the older plants. In June last year, I put out one plant in the Kalhatti gardens, which has grown very much stronger than the plants in the Ootacamund gardens. The plants now in Ootacamund will be transferred to Kalhatti as soon as the weather is favorable for transplanting, and every means adopted to increase the stock as fast as practicable. At Banbury, in England, where medicinal rhubarb has been cultivated for many years, it is considered advantageous to allow the roots to remain in the ground until they are six or seven years old, but they are seldom allowed to attain more than four year's growth, at which age I have no doubt our plants will commence to yield a return. *Rosemary and Lavender* grow freely in a friable, loamy soil in Ootacamund, and are easily propagated by cuttings. When the plants already put out have made a sufficient growth, they will be cut over, the produce dried, and forwarded to the medicinal department for distillation. *Taraxacum and digitalis* grow so freely in Ootacamund as to require no special care. The demand for these drugs by the medical department is at present supplied from plants growing spontaneously in the gardens. Should the present demand be largely increased, it could easily be met with little expense in cultivation. *Jalap.*—With a view to further extending the cultivation of this valuable drug, 1½ acres of land immediately within the northern boundary of the gardens have been broken up, terraced, and manured. The land will be first cropped with potatoes, then planted up with jalap to meet the requirements of the Indian Medical Department. In August last year, I received from Surgeon Major Bidie a packet of seed called barbung, believed to belong to a species of Plantago, and which Dr. Bidie says is largely used in Persia and Central Asia as a cure for dysentery. The seed was sown immediately after receipt, and germinated freely. As soon as the plants were large enough, they were transplanted in the Kalhatti nurseries, where they are making satisfactory progress. When the plants have flowered and seeded, specimens and a packet of seed will be forwarded to Dr. Bidie for identification and analysis. During the present year I hope also to undertake the cultivation of the following drugs, all of which are in considerable demand by the medical departments, and I have no doubt will be found to thrive either at Ootacamund or Kalhatti: Aconitum Napellus, Atropa Belladonna, Colchicum autumnale, Gentiana lutea, Hyoscyamus niger, Convolvulus Scammonia. Artemisia sps., Valeriana officinalis."—*The Chem. and Drugg.*

Dangers from Hyoscyamine.—M. Empis perceived in a patient, attacked with trembling paralysis, signs of poisoning induced by a pill of 5 milligrams ($\frac{1}{12}$ grain) of hyoscyamine, namely: intoxication, congestion of the face, restlessness, dryness of the tongue, nausea, vomiting, etc. The trembling had ceased. Then violent delirium broke out, and continued, steadily increasing, attended with tetanic convulsions, and extreme dilatation of the pupil. He neither recognized his wife, children, friends, nor physician. Deglutition became impossible, breathing short and difficult. The pulse remained steady at 96. This fit lasted not less than three hours.

M. Empis thereupon prescribed strong coffee, and friction of the lower limbs. Gradually he regained his normal condition. The trembling completely ceased. The next day he recollected nothing but having seen rats and snakes, and having witnessed a scene of terrible slaughter.

This proves that hyoscyamine is more dangerous a medicament than is generally supposed. In fact, the terrible effects which the author has witnessed are nowhere mentioned. Five milligrams is, therefore, too strong a dose. Besides the medicament is not always of uniform quality which may affect the result.

[It seems to us that the unexpected effect was probably owing to the fact that the pure crystallized alkaloid was dispensed and administered instead of the amorphous alkaloid, which the physician may have intended.—ED. N. R.]

New Copying Process.—Mr. Adler has communicated to the Photographic Society of Vienna a new copying process, based upon the use of the glue-glycerin pad, which is employed in the hectograph. For the purpose of the new process, however, the pad must contain more glue. The writing or drawing is made upon paper with a concentrated solution of alum, to which a few drops of aniline ink are added, to make the letters or figures visible on the paper. Before transferring this to the pad, the latter is wiped with a damp sponge, and the moisture is allowed to remain a few minutes to make the surface sufficiently absorbent. The paper is now placed on the pad, written side down, and, after a few minutes, again removed, when the writing or drawing will be transferred to the pad. By means of a rubber roller a small amount of printer's ink is now applied to the surface: the ink will adhere only to the lines made by the alum solution. A slightly damp sheet of paper is now placed upon it, and by gentle rubbing, the writing transferred to the latter. It is necessary to ink the pad each time, but a large number of impressions may be taken, and the prints have the advantage of being permanent and black.—*Pharm. Centralh.*, No. 49.

How to Make Carbon Points for Splitting Glass.—1. Dissolve 100 parts of gum arabic in 240 parts of water, and mix the solution with a paste prepared by triturating 40 parts of powdered tragacanth with 640 parts of hot water. Then, having dissolved 20 parts of storax and 20 parts of benzoin in 90 parts of alcohol (0.830), strain the latter solution and add it to the mixed mucilage. Finally mix the whole intimately with 240 to 280 parts of powdered charcoal, so as to be uniform throughout. The charcoal should previously be passed through a fine sieve. The doughy mass is cut into suitable pieces, which are rolled between two boards dusted over with coal-dust, until cylindrical strips about 1 centimeter in thickness are formed, which are allowed to dry slowly between blotting paper. When using them one end is pointed like a lead pencil, and, after having previously made a scratch in the glass with a file or diamond, the heated and glowing end of the pencil is carried along the line in which the glass is intended to be fractured.

2. Dissolve 8 to 10 parts of tragacanth in about 100 parts of hot water, add to the mixture, under stirring, 30 parts of acetate of lead and 60 parts of finely sifted beechwood charcoal, and proceed as in the previous ormula.

3. Sticks of soft wood (willow or poplar), of about the thickness of a finger, which must be thoroughly dry, are immersed for about one week into a concentrated solution of acetate of lead, after which they are again dried. When ignited these sticks burn like glazier's charcoal.

The first mentioned formula yields the best product, as it burns much slower than the others.—*Neueste Erfind. und Erfahr.*, 1880, 532.

Medicated Lozenges.—Dr. Prosser James writes concerning this form of remedy that the lozenges of the Br. P. are most defective on account of their hardness. They irritate the mucous surface; and the sharp corners of some shapes in use, or the broken pieces of others, may enlarge ulcers, tear congested membrane, or do other injury. Of course when used for their constitutional effects these objections do not apply. A softer consistence has been obtained by the use of fruit paste, as in the black-currant lozenges; and this substance has been more extensively used of late years. Extract of licorice, as in "Pontefract cakes," and gelatin, have also been utilized. A more recent innovation is the efflorescent base introduced by Mr. Cooper, which for some purposes is of special value. The French *Pâté Guimauve* has the defect of not keeping well and the jujubes which were formerly made with the juice of *Rhamnus Zizyphus*, now never contain that fruit.

An experience of more than a quarter of a century leads Dr. James to conclude that a jujube paste of the best French manufacture will be found most useful as a base.

Subnitrate of Bismuth contaminated with Phosphate of Calcium.—Dr. Dioscoride Vitali reports having met with a subnitrate of bismuth containing phosphate of calcium. The excessive lightness of the bismuth salt made him suspicious of its purity, and the process by which he detected the adulteration is described by him as follows: A small quantity of the suspected salt was dissolved in just sufficient strong nitric acid, and to the solution was added a solution of molybdate of ammonium, which turned the liquid immediately yellow, and shortly produced a copious yellow precipitate. The subsequent addition of ammonia, in excess, caused the yellow color to disappear, and the precipitate became white. This preliminary test indicated the presence of considerable amounts of phosphoric acid. Another sample of the salt was then dissolved in dilute hydrochloric acid, the solution diluted with water as far as possible without producing a precipitate, and all the bismuth precipitated as sulphide by means of sulphuretted hydrogen. The filtrate was heated to expel the excess of the gas, and ammonia then added in excess, which caused a gelatinous precipitate. The liquid separated from the latter by filtration yielded a white precipitate with oxalate of ammonium, insoluble in acetic, but soluble in hydrochloric acid, being, therefore, oxalate of the calcium. This part of the lime salt was evidently itself an impurity in the phosphate of calcium employed for adulteration, and was present, no doubt, as carbonate, since the suspected bismuth strongly effervesced with acids. The gelatinous precipitate was dissolved in nitric acid, and the solution boiled with pure powdered tin. The liquid was filtered from the whitish precipitate, and the filtrate yielded a copious precipitate with oxalate of ammonium, as before, being the remainder of the calcium as oxalate The white precipitate caused by the tin was dissolved in warm hydrochloric acid, and to the solution was added molybdate of ammonium, which produced the characteristic yellow precipitate of phosphomolybdate of ammonium.—*Bolletino Farmaceutico* (Milano), 1880, 295.

Pepsin.—M. Petit (*Journ. de Thérap.*) has made a series of careful researches on pepsin, which confirms what Prof. Liebreich, of Berlin, has said of the value of slightly alcoholized glyceroles of pepsin—such as is known as Liebreich's Essence of Pepsin. The value of pepsin depending on its power, not only to dissolve fibrin, but also of transforming it into peptones, a slightly alcoholized solution not only preserves its activity, but its efficacy is thereby in no way interfered with, providing its alcoholic strength, when diluted in the stomach, does not exceed 5 per cent.—*Brit. Med. Journ*

Fucus digitatus is said to be most productive of iodine of the varieties of sea-weed in which it is found; Dr. Thercelin having extracted 3% from it.

Decalcified Bone Drainage Tubes.—A correspondent of the *Lancet* gives the following simple mode of preparing these articles, the use of which is somewhat fashionable at present. The long bones of the limbs of poultry and small birds, having been well boiled, to free them from soft tissues, are soaked for about ten hours in a mixture of one part of hydrochloric acid and two parts of water; when they become sufficiently soft and flexible for use and can be cut with scissors. The ends are then to be cut off, and the medullary canal cleaned out with a wire or round file, after which they should be boiled in a 5 per cent solution of carbolic acid to which borax has been added. Thus prepared they should be kept in carbolized oil of a strength of 5 per cent.

Preservation of Leeches.—Mr. Schwonder finds that by keeping leeches in a stone-ware pot, filled one-half with pieces of peat and to three-fourths with water, in a room capable of being heated in winter, and at least one story above the ground, they keep perfectly. The water need only be changed occasionally, say once in three weeks, and then the peat is to be washed with water. Mr. S. thinks that the success of keeping leeches depends upon their being preserved in a place elevated from the ground.—*Pharm. Zeit.* and *Neueste Erfind. und Erfahr.*

Milk-sugar Anhydrous at 100° C.—(M. Schmöger.) On evaporating a solution of milk-sugar, at 100° C. (= 212° F.), until it is completely dry, it is obtained in an anhydrous state, and not, as has been supposed heretofore, in combination with 1 molecule of water. This new fact will be of some importance in quantitative determinations of milk-sugar, for, under the present supposition, the determination of the total solids of milk are defective by 0.2 per cent.—*Ber. d. Deutsch. Chem. Ges.*, 1880, 1,915.

Phosphoric Acid.—In a new process for the manufacture of phosphoric acid, natural phosphates, unground, are dissolved in dilute hydrochloric acid, and when the acid has ceased to act, the clear solution is decanted and mixed with enough sulphuric acid to saturate all the dissolved lime, leaving a mixture of hydrochloric and phosphoric acids and sulphate of lime. This mixture is filtered to separate the latter, and the acids are then concentrated, and the hydrochloric acid condensed and collected for use by means of ordinary columns.—*Science.*

Chlorate of Potassium.—A case of poisoning is reported in the *Marseilles Médical.* An elderly man took in mistake for Epsom salt, 35 grams of the chlorate. Death followed in seven hours and was preceded by vomiting, colic, diarrhœa, general weakness, and rigidity of the limbs. After death the skin of the back was slate-colored. —*Med. News.*

Ether and Chloroform—Summarizing the report of the committee appointed by the *Br. Med. Assoc.* (consisting of Prof. McKendricks, Dr. Coats, Dr. Ramsay, and Mr. Newman) to investigate the action of various anæsthetics, the *British Medical Journal* writes: "In concluding these investigations, two lines were followed: first, to discover wherein the special dangers of chloroform consist; and, second, to attempt to find some safer anæsthetic. Observations made on rabbits showed that chloroform had a most disastrous action on the heart, as well as upon the respiratory centre; that, while ether might be administered for an indefinite period without affecting the heart, no sooner was the inhalation of chloroform commenced than the right ventricle began to distend, and, in course of time the cardiac contractions ceased. In every respect but one, ether was superior to chloroform. It had, however, one disadvantage, viz.: the length of time which was required to obtain its action, etc., etc."

Bismuth.—Dr. Tédenat prefers the phosphate of this substance to the subnitrate or subcarbonate. It is slightly less soluble and may be used in proportionately smaller doses with equal effect and for similar conditions.

Gluten-Bread.—Prof. Xav. Landerer directs to prepare gluten-bread by inclosing wheat-flour in a linen sack and kneading this under water until no more starch can be washed out, that is until the water remains clear. The gluten remaining in the sack forms the basis of the bread; it is mixed with yeast or sour dough, also with butter, eggs, and sometimes with chopped meat, sprinkled over with anise or fennel, and then baked. At the same time a generous Greek red wine is recommended to be used as a stimulating drink.—*Pharm. Zeit.*

Morgan's Elastic Plaster.—Take thin sheet-rubber and apply to it a coating of Boynton's Plaster, namely, lead-plaster, 94 parts, resin, 6 parts.

This plaster has the advantage of accommodating itself to all movements of the muscles without curling up or becoming stiff, and has been used with good advantage as a dressing to sores and wounds.

Gutta-Percha Gloss Blacking.—To 30 parts of syrup, contained in a boiler, add 9 parts of lamp-black and 1½ parts of finest bone-black, and mix the whole intimately together. Heat 1½ parts of gutta-percha, cut into small pieces, in a kettle over a coal fire, until it is nearly all melted, add to it gradually, under constant stirring, 2½ parts of olive oil, and when the gutta-percha is all dissolved, ½ part of stearin. Pour the latter mixture, while still warm, very slowly and gradually into the first mentioned mixture, and, when the whole has been thoroughly incorporated, add a solution of 2/10 part of gum senegal in 6 parts of water, likewise stirring. Finally, the product may be aromatized by the addition of 1/10 part of oil of rosemary or lavender.

This blacking produces a fine gloss of a deep black. It is not injurious to leather.—*Neueste Erfind. und Erfahr.*

Ergot has been administered in asthma by DR. H. M. C. CLANAHAN, of Fort Belknap, Montana (*Coll. and Clin. Rec.*), who reports two cases cured by doses of a half-drachm given thrice daily for some weeks. No disturbance of digestion is reported.—*Med. News.*

Homatropine.—The hydrobromate is the subject of a paper in the *Medical Times* of Nov. 6th, by DR. P. D. KEYSER, in which the writer confirms the observations of Völckers and Fuchs, that complete paralysis of accommodation does not take place in the majority of cases from its use, and, that the pupil is not always dilated to its full limit. The weaker solutions are not potent enough to accomplish full paralysis, and stronger solutions cause so much irritation as to lead to antagonistic action of the circular fibres of the iris.

Duboisine is more powerful, its effects more persistent, it does not cause conjunctival irritation, it completely dilates the pupil, and paralyzes accommodation. He notes that in its use it should not be allowed to flow into the tear duct, owing to the risk of toxicological effects. The chief value of hydrobromate of homatropine lies in the rapidity with which its effects pass away, thus enabling the accommodation to be temporarily paralyzed for purposes of diagnosis.

Duboisine has been substituted by DR. DUJARDIN-BEAUMETZ for atropine as a hypodermic injection for exophthalmic goitre, and in the two cases in which he has tried it, great diminution of the palpitations and vascular throbbings resulted. He has also noticed a readily cumulative effect from repeated doses, although he used only very small quantities—a quarter to a half milligram; the symptoms resembling the poisonous effects of belladonna.

Oil of Eucalyptus.—DR. SIEGEN proposes the oil of eucalyptus for use as an antiseptic surgical dressing, by dissolving 3 grams of the oil in 15 grams of alcohol and then diluting with 150 grams of water. In this he soaks ordinary gauze which is then applied wet, covered with gutta-percha tissue, and held in place with gauze bandages. This causes no irritation even of very sensitive skins, but is perfectly antiseptic. It can also be used in other ways common with antiseptic solutions.

The Inferior Quality of Drugs Supplied to Work-House Hospitals and Dispensaries in Ireland is the subject of a paper by DR. C. A. CAMERON in the *Med. Press and Cir.*, for Nov. 3d. The writer condemns the habit of soliciting bids from dealers and awarding the contract for supplying medicines to the lowest bidder, as one that is calculated to supply inferior drugs in place of those required, and says that he has found the following to be the most common defects: 1. Substitution of methylated alcohol and ether. 2. Deficiency of alcohol in tinctures. 3. Deficiency in medicinal strength. Less frequently he finds cheap ingredients substituted for more costly ones. Dr. Cameron quotes the returns of the Public Analysts of the United Kingdom to show that during 1879 out of 615 drugs analyzed, 26.66 *per cent* were adulterated. In 1878, the proportion of adulterations was 35.77 per cent, and in 1877, 23.82 per cent.

Sulphate of Copper is used by DR. A. W. WISEMAN, of Jerusalem, N. C., as a remedy for Rhus-poisoning. He uses enough of the salt to give a color to water in which it is dissolved, and gradually increases the strength until it causes slight "stinging," the applications being repeated three or four times daily.

Soothing-Syrups and Infantile Diarrhœa.—MR. H. SWORDER, in reporting on the health of Luton, suggests that it would be interesting to know how many infants may have become tolerant of opium by having small doses administered to quiet them while their mothers are absent, so that when necessity arrises for its administration in diarrhœal affections, ordinary doses produce no results.

Figs.—Prof. Bouchut has made experiments with figs which appear to show that the milky juice of the tree possesses a digestive ferment. Prof. Billroth relates a case of mammary cancer in which a poultice of dried figs boiled with milk entirely removed the offensive odor.

Menthol.—This is insoluble in water, but dissolves readily in alcohol, ether, or glycerin. To relieve neuralgia, paint the painful part with a solution of the strength of one grain to ten minims of alcohol.—*N. Y. Med. Jour.*

Lip Salve.—The following formula is recommended by Mr. Bienert, of Orechow, Russia. He states that the use of yellow instead of white wax prevents rancidity for nearly a year, and that the addition of salicylic acid ensures its keeping qualities for a much longer period:

Spermaceti	18 parts
Yellow wax	100 "
Oil of almond (or olive)	150 "
Alkanet	12 "
Oil of bergamot	2 "
" lemon	2 "
Pomade jasmine	4 "
Salicylic acid	3 "

Instead of alkanet root, ¾ to 1 part of alkannin may be used.—*Pharm. Zeitsch. f. Russl.*, No. 23.

Wm. Rieger's Neapolitan Hair-Dye.—No. I. consists of 1.198 gm. nitrate of silver, 0.06 gm. of ammonia = 0.6 gm. of water of ammonia, a little nitrate of ammonium, and 11.6 gm. of water. It is probably prepared by dissolving the nitrate of silver in water, adding some ammonia, and neutralizing the greater portion of this by nitric acid. No. II. consists of 0.495 gm. of tannin and 12.0 gm. of alcohol, sp. gr. 0.837.—M. BROMMER in *Pharm. Centralh.*, 1880, 43.

Bronzing-Liquid.—Ten parts of aniline red and five parts of aniline purple are dissolved in 100 parts of 95 per cent alcohol, on the water-bath, and the solution, after the addition of five parts of benzoic acid, boiled (for 5–10 minutes) until it has changed its greenish color to light bronze-brown. Applied with a brush upon *leather*, metal or wood, the liquid produces a magnificent bronze coating.—*Bayr. Ind. und Gewerb. Zeit.*

The Commerce of Gum Arabic at Trieste.—The commerce of gum arabic at Trieste has for a number of years past assumed very large proportions. Mr. L. Ordega, Consul-General of France at Trieste, has furnished, under date of August 10th, 1880, an interesting account of the total movement, as well as a list of the thirty-two grades, into which all the gum arabic arriving from Africa is divided.

The total importation and exportation during the years 1877, 1878, and 1879 was as follows:

	IMPORTATION.	EXPORTATION.
1877,	2,695,100 kilos.	2,707,600 kilos.
1878,	2,726,300 "	2,796,400 "
1879,	4,638,400 "	3,080,900 "

The gums are divided into the following thirty-two grades,* of which the mean prices per 100 kilos have the following ranges [in American money, calculated by ED. N. R.]:

1. (Gum) Arabic, white, No. 1, a, $74.76–75.60.
2. Ghizira, white, No. 1, b, $51.66–52.08.
3. Arabic, pale-yellow, No. 2, a, $52.08–52.50.
4. Ghizira, pale-yellow, No. 2, b, $43.26–43.68.
5. Arabic, yellow, No. 3, a, $42.00–43.26.
6. Ghiriza, yellow, No. 3, b, $35.70–36.12.
7. Arabic, superfine, choice, No. 4, a, $32.34–37.76.
8. Arabic, fine, No. 4, b, $29.82–30.24.
9. Ghizira, fine, No. 4, c, $26.88–27.72.
10. Arabic, medium, choice, No. 4, d, $28.56–28.98.
11. Ghizira, medium, choice, No. 4, e, $20.16–21.00.
12. Arabic, granular, No. 5, a, $24.36–24.78.
13. " " No. 5, b, $21.84–22.26.
14. Ghizira, granular, No. 5, c, $19.32–20.16.
15. Suakin sennāry, granular, No. 5, d, $18.28–19.32.
16. " ordinary, granular, No. 5, e, $12 60–13.44.
17. Arabic, crude, granular, No. 5, f, $29.82–30.24.
18. " " select, No. 5, g, $39.90–40.32.
19. Sennāry and Ghizira, crude, granular, No. 5, h, $19.78–20.58.
20. Gedda, No. 6, a, $31.50–31.92.
21. Senegal, choice, No. 6, b, $29.40–30.24.
22. " crude, No. 6, c, $20.58–21.00.
23. Arabic, crude, No. 7, a, $28.56–29.40.
24. " " without dust, No. 7, b, $32.76–33.60.
25. " " granular, No. 7, c, $33.60–34.44.
26. Sennāry, crude, and Ghiriza, No. 8, a, 19.74–20.16.
27. " " " " without dust, No. 8, b, *same price.*
28. Sennāry, crude, and Ghizira granular, and without dust, No. 8, c, *do.*
29. Suakin, crude, No. 9, $16.80–18.06.
30. Senegal, genuine crude, No. 10, $29.40–29.83.
31. Damaged gums, No. 11, according to quality.
32. Powdered " " 12, " "

The available stocks during 1877 amounted to 1,700,000 kilos; but in 1879 they exceeded 3,600,000 kilos; and even this enormous reserve was hardly sufficient to satisfy the demands from the various markets of Europe. On Aug. 1st, 1880, the stock on hand at Trieste was as follows:

	kilos.
Arabic	387,000
Ghizira	57,000
Sennāry	1,400
Suakin	313,000
Gedda	79,000
Total	838,000

The construction of new routes has rendered the transport of the Suakin gum more easy from its place of origin to the port of debarkation. Unfortunately, certain rains, called karif in Egypt, frequently interrupt communication with Khartum; owing to this circumstance no arrivals whatever from Suakin reached Trieste during the whole of last October. The movement in gums is most active during the months of September, October, and March.—From *Journal des Consulats*, Jan. 1st, 1881.

*Compare particularly *Pharmacographia* [2], 235 seq., where the quality and sources of the standard grades are given. There is some discrepancy between the kinds mentioned by *Pharmacographia* and the usage among the merchants at Trieste; but this is not to be wondered at.

American Cotton-Seed Oil in Italy.—MR. B. O. DUNCAN, the United States Consul at Naples, in a recent report to the Department of State, writes that the large recent importation of cotton-seed oil has been a great source of alarm, on account of its competition with olive oil, not only as a substitute, but for purposes of adulteration. The cotton-seed oil has found its way into the remotest mountain villages, whose sole production is olive oil, where it is mixed with the latter, and sold as pure; and so great is the resemblance that even the most expert cannot detect the mixture.

The government is endeavoring to impose a heavy tax on cotton-seed oil, as a protection to the production of olive oil. But even then, the protection would be inadequate, as the cotton-seed oil has already found its way into other countries to which the olive oil was exported, especially into Russia, one of the chief outlets for the Italian olive oil. As the cotton-seed oil can be brought into Italy, and sold for less than half the value of olive oil, the temptation to use it for the purpose of adulteration is manifest.

The California Wine Crops.—The San Francisco *Alta* says that the California wine crop of 1880 was between ten and twelve million gallons. After mentioning the tendency of dealers to overstate the quantity of wine made, the *Alta* adds: "San Francisco has never received more than 3,500,000 gallons in a year, nor has the State ever exported more than 2,200,000 gallons in a year. The receipts at San Francisco were 1,700,000 gallons in 1876, 2,400,000 in 1877, 3,000,000 in 1878, 3,400,000 in 1879, and the same in 1880. The receipts of brandy were 60,000 gallons in 1876, 130,000 in 1877, 110,000 in 1878, and 100,000 in 1879. Our wine exports by sea were 510,000 gallons in 1876, 890,000 in 1877, 1,230,000 in 1878, 1,400,000 in 1879, and the same amount in 1880. The export by rail is about 800,000 gallons annually. The figures for 1881 will probably show a decided increase over 1880. The State has never approached the limit of its capacity in wine-making, the greater part of the grapes having been used every year for the table, while many have been allowed to spoil on the vines, and the hogs have been turned into some vineyards, as the most profitable use that could be made of them. There have been years when grapes sold at Los Angeles and Sonoma for half a cent a pound at wholesale, and such low prices still prevail in large vineyards in the Sierra Nevada, remote from the market."

The Supply of Natural Salicylic Acid.—In a communication to the editor of the *Pharmac. Journal*, Mr. A. W. Postans expresses his opinion that the commercial salicylic acid, made from phenol, should not be used for medical purposes, but only the natural acid (from oil of wintergreen), provided it could be obtained in sufficient quantities. It sells now at 42 shill. per lb., against 9*s.* 6*d.* for the artificial. In reply to this, the editor of the *Pharm. J.* says: "There can hardly be any doubt that an adequate supply of the natural acid would be forthcoming, if there were any considerable demand for it. In 1871, Mr. Broughton reported to the India government that the essential oil obtained from *Andromeda Leschenaultii*, a plant growing commonly in the Neilghiris, consists of methyl-salicylic acid, with even less of accompanying hydrocarbon oil than is present in Canadian oil of wintergreen. So abundant did he consider the supply of this oil obtainable, that he proposed to use it in the manufacture of carbolic acid. Dr. De Vrij has also stated that an essential oil, closely resembling oil of wintergreen, is yielded by species of Gaultheria, growing plentifully on the mountains of Java." [Natural Salicylic Acid, from oil of wintergreen, is manufactured in this country by Messrs. Merrell, Thorp & Lloyd, Cincinnati, O.]

CORRESPONDENCE.

An Answer to the Criticism by "O. O." of the Proposed National Law to Prevent Adulteration of Food and Drugs.

BY W. H. N.

A CERTAIN amount of antagonism to any new measure is always to be expected, even though the object of the same be to promote the welfare of the public. When proposed amendments proceed from an intelligent and learned critic, some benefit may arise from the same, in evolving new ideas. No matter how perfect any proposed bill may seem at the first glance, there may yet be room for improvement.

The friends of the "Bill to prevent the Adulteration of Food and Drugs," which has been indorsed by the members of the National Board of Trade, the Chamber of Commerce, Produce Exchange, and every wholesale druggist in the city of New York, besides numerous commercial organizations in various parts of the country, did not expect that this bill would be passed by Congress without some amendment.

The committee appointed by the National Board of Trade, composed of Surgeon Billings, Vice-President of National Board of Health; Prof. Chandler, President of New York Board of Health; ex-Chancellor Williamson, of New Jersey, and A. H. Hardy, Esq., of Boston, combining the sanitarian, the health officer, the jurist, and the merchant, were eminently fitted for the object they have attained, in producing a bill which has the virtue of being concise, and embracing everything that, in their estimation, it was proper to introduce at this time: their report having been made, they have nothing further to do with the matter, it having been presented to Congress. The work of promoting legislation on this subject is now in the hands of a committee appointed by the President of the National Board of Trade, composed of Henry C. Meyer, Esq., of New York; John P. Wetherill, Esq., of Philadelphia, and Richard D. Fisher, Esq., of Baltimore; they have informed me they will be pleased to have any person or association interested in this subject state to them any amendment or objection they may have to any particular clause of this bill, which will be brought to the attention of the Congressional Committee, to whom this bill has been referred, if it is deemed proper and desirable so to do.

Let us examine what it is that "O. O." finds objectionable. In the first place, he tells us that "No precautions necessary to insure the appointment of properly qualified examiners are laid down." I am assured that the National Board of Health will select public analysts (*i. e.*, public examiners) from among the number reported to them as properly qualified, by a committee of experts appointed by the different colleges of medicine and pharmacy.

"O. O." seems to think there will be a distinction, when there will be really no difference as to what a "public examiner" should be, and what a public analyst selected by the National Board of Health really will be.

In Sec. 5, Bill National Board of Trade, "the Secretary of Treasury is authorized to appoint from names submitted to him for that purpose by the National Board of Health, suitably qualified persons as public analysts;" this is plainly a provision for appointing what "O. O." designates "public examiners." He, undoubtedly, is a little considerate in writing this: "Sec. 4 is so drawn as to impair the efficiency of the measure, by providing that the collector of customs shall designate the public analyst, whose decisions shall settle finally any case of protest."

This public analyst has been appointed as specified above. He analyzes the article which has been decided previously to be adulterated; and how his decision, being a final settlement of the case, "impairs the efficiency of the measure," is certainly, to an unprejudiced mind, a little mysterious.

Sec. 8 of Bill National Board of Trade contains the simplest and most comprehensive definition that has ever been framed of the term adulteration. "O. O." characterizes it as being "loosely drawn;" and yet, in paragraphs 1–8 of Sec. 10, and also Sec. 11 of his proposed bill, has introduced substantially the same as that to be found in Sec. 8 of Bill of National Board of Trade; and his addition of paragraph 5 in Sec. 10 is totally unnecessary, because it is a reiteration of what is embraced in other paragraphs.

Why is it that he objects to paragraph 6 of Sec. 8 of National Board of Trade Bill, and immediately afterwards introduces into his own bill a paragraph whose meaning is identical? He indulges in the same course of action in writing that "the definitions in Sec. 10, as given, are unnecesary;" and follows this up by adding to his bill a definition of the term "food," whose signification is the same as the interpretation given in the National Board of Trade Bill, with the exception that "O. O." uses much useless and unnecessary language. His forgetfulness further develops itself, in his not being conscious of the existence of a distinction between medicines for external and internal use; he cannot surely believe that all medicines for external use are adapted for internal consumption.

The National Board of Health are *commanded* to hold consultations with experts, as ordered in paragraph 7, Sec. 13, Bill of "O. O.;" then allowed full liberty to be governed in their actions, by such consultations, or not, as they please. Again, in paragraph following, they are *ordered* "to exempt from the operation of this act such commercial articles," etc., as they seem fit to exempt.

Is not all *this* embraced in Sec. 9, Bill of National Board of Trade, in rather more suitable language?

"O. O." has not found it very difficult to frame a law, when others have with care selected the material necessary for the same, and criticisms on the subject have been freely published. The temptation in this case he has not been able to resist, to introduce matter which the compiler may consider desirable, but which is really unnecessary, and tends to verbosity, without any other object being obtained.

Hyposulphite of Sodium for cleaning Silverware.

DEAR SIR:—Through your journal, I should like to recommend the domestic use of hypo-sulphite of soda for the cleansing of tarnished silverware. It is safe, cheap, exceedingly efficacious, and, so far as I can learn, hitherto unused for such a purpose.

A cloth or brush, wet with the saturated solution of this salt, even without the addition of any of the commonly-used cleansing powders, will remove all tarnish from a silver surface, in two to three rubs.

Yours, etc., B. F. DAVENPORT, M.D.,
Professor of Analytical Chemistry.

MASS. COLL. OF PHARM., BOSTON, Jan. 15th, 1881.

Natural History of West-Indies.—Baron Eggers, in St. Thomas, who has for many years been engaged in the study of the botany of the West-Indian Islands, has undertaken the systematic collection of specimens of natural history, illustrating the three kingdoms of nature in these islands. At present, the following departments will be paid special attention to: Botany in its whole extent (dried plants, woods, fruits, and seeds; living plants); Entomology (particularly Microlepidoptera); land and sweet-water mollusks; Minerals. The agency for the sale of these collections in Europe is in the hands of Mr. Adolph Toepffer, in Brandenburg a. H., Prussia. Intending subscribers or purchasers in this country had better address direct: Baron Eggers, St. Thomas, West Indies. So far as we can learn from the circular which has reached us, the botanical specimens will be accompanied by names (or in some cases by numbers, if the specimens are new and require subsequent diagnosis), and will be sold at *about* the following rates: Dried plants, phænogams and cryptogams, $7.50 per 100; specimens of woods (cross-sections of stem, two inches thick), $20 per 100; fruits and seeds $7.50 per 100.

NOTES, QUERIES AND ANSWERS.

Under this heading we shall, to the best of our ability, endeavor to answer such questions addressed to us, as come within the scope of this journal, provided they are accompanied by the name and address of the writer. Answers to queries received after the 5th of the month will lie over until the next issue. Unless special instructions to the contrary accompany the query, the initials of the correspondent will be quoted at the head of each answer.

When asking for the formula of an unusual, patented, or proprietary compound, always accompany the query with any information you may already possess regarding the locality in which it is used, its use and reputed effects, in order to enable us to make inquiry without waste of time and labor. When it can conveniently be done, send also a specimen of the label used on packages of the compound.

No. 847.—**Presence of Fusel Oil in Alcohol and other Spirituous Liquids** (S. B. & Co.).

Much has been written about the detection of fusel oil in alcohol, etc., but there is no method known by which the quantity of fusel oil can be safely estimated. As we have had this question put to us repeatedly, we shall answer it by quoting the best compilation of methods known to us, from the work of Mr. Alf. H. Allen, F.C.S., on page 75 above.

No. 848.—**Colored Fires** (Alpha).

We have, on several occasions, given directions for making colored fires or lights; but as this appears to be a periodically returning query, we will again answer it.

In the first place, it is to be remembered, that the *mixing* of the ingredients of these fires *must be performed with the greatest caution*, if the substances are dry. They should be mixed in small quantities at a time, on a piece of paper, by means of a wooden spatula, *without friction of any kind.* It is, under all circumstances, advisable to slightly *dampen* the powders with a little strong alcohol, before mixing. Every ingredient must be in fine powder.

It is not advisable to keep any of these fires, ready mixed in stock. Persons, who make a business of the manufacture of these goods, are in the habit of preparing large quantities and adopt special precautions to prevent the products from spoiling. But even they sometimes meet with accidents.

1. *White Fire.*	*a.*	*b.*	*c.*	
Nitrate of potassium	100	63	75	parts.
Sulphur	30	21	15	"
Realgar (native sulphide of arsenic)	9	—	—	"
Sulphide of antimony	—	6	—	"
Gunpowder flour	—	36	200	"
Chlorate of potassium	—	5	—	"
Charcoal	—	—	120	"

The first mixture, owing to the poisonous fumes evolved by it, should only be used in the open air. The third mixture may be made to burn slower by slightly increasing the amount of charcoal.

2. *Red Fire.*	*a.*	*b.*	*c.*	*d.*	*e.*	*f.*	*g.*	
Chlorate of potassium	24	32	20	40	16	10	—	parts.
Nitrate of strontium	30	48	20	39	60	68	4	"
Sulphur	18	18	20	18	21	22	—	"
Nitrate of potassium	8	—	10	—	—	—	—	"
Sulphide of antimony	8	6	6	—	—	—	—	"
Charcoal	4	2	1	3	1½	¾	—	"
Sugar	—	—	2	—	—	—	—	"
Shellac, powdered	—	—	—	—	—	—	1	"

Mixture *a* is brilliant and burns moderately quick, *b* gives the most intense red, and burns rapidly; *c* burns slowly, *d* quickly, *e* less quickly, *f* burns slowly, *g* burns slowly but brilliantly.

3. *Yellow Fire.*	*a.*	*b.*	*c.*	
Nitrate of potassium	60	70	70	parts.
Nitrate of sodium	10	—	—	"
Carbonate of sodium, dry	—	6	—	"
Chloride of sodium, pure	—	—	6	"
Sulphur	25	25	25	"
Charcoal	5	5	5	"

All these are very hygroscopic, and must be carefully kept from moisture. If the powders are moistened, this must be done with very strong alcohol.

4. *Green Fire.*	*a.*	*b.*	*c.*	*d.*	
Chlorate of potassium	35	20	36	9	parts.
Nitrate of barium	45	20	40	70	"
Sulphur	10	8	24	21	"
Charcoal	6	5	—	—	"
Calomel	—	10	—	—	"
Sulphide of antimony	—	5	—	—	"
Nitrate of potassium	—	20	—	—	"
Rosin	—	5	—	—	"

Mixture *a* yields the most brilliant green, *a*, *b*, and *c* burn quickly, *d* slowly.

5. *Blue Fire.*	*a.*	*b.*	*c.*	
Chlorate of potassium	50	25	30	parts.
Nitrate of potassium	—	50	40	"
Ammonio-sulphate of copper	25	—	—	"
Ammonio-nitrate of copper	—	—	20	"
Carbonate of copper	—	12	—	"
Sulphur	12	16	16	"
Charcoal	16	12	16	"
Burnt alum	—	—	10	"

The first mixture produces a much darker blue than the others.

6. *Violet Fire.*	*a.*	*b.*	*c.*	*d.*	*e.*	
Chlorate of potassium	30	50	40	52	51	parts.
Nitrate of potassium	—	20	30	—	—	"
Nitrate of strontium	20	—	20	—	—	"
Carbonate of calcium	—	—	—	29	10	"
Carbonate of potassium	—	10	—	—	—	"
Sulphide of copper	—	—	20	4	—	"
Carbonate of copper	—	—	—	—	24	"
Calomel	2	—	8	—	—	"
Sulphur	20	15	12	15	15	"
Charcoal	5	4	6	—	—	"
Ammonio-nitrate of copper	15	—	—	—	—	"

Mixture *a* yields the darkest violet, and burns moderately quick, *b* burns rapidly, *c* less so, *d* rapidly, and *e* slowly.

No. 849.—**Transparent Soap** (J. S.; B.).

Perhaps the following formula for a transparent glycerin soap might answer your purpose. It is given on the authority of Alwin Engelhardt, in Leipzig:

Heat 20 parts of fresh tallow and 10 parts of Cochin-China cocoa-nut oil to 167° F. Then mix 15 parts of solution of caustic soda, of about 1.382 spec. gr. (containing about 35% of caustic soda), 12 parts of 90% alcohol, 15 parts of glycerin, 6 parts of white sugar dissolved in 2 parts of water; heat the mixture likewise to 167° F., and add it slowly, and under brisk stirring, to the fats. Saponification will soon take place with considerable swelling of the mass. The soap may now be colored, and when somewhat cooled, perfumed and cast in moulds.

No. 850.—**Styrone** (Dr. O. A. W.).

We doubt whether this will be able to take the place of the more commonly employed antiseptics, as it cannot be supplied in sufficient quantities, at least for the present. Regarding its employment we quote the following from the Boston *Medical and Surgical Journal*, March 11th, 1880: At the meeting of the Boston Society for Medical Observation, held October 6th, 1879, Dr. Beach showed a

specimen of styrone (styryl alcohol or cinnyl alcohol,* $C_9H_{10}O$ or C_9H_9OH). It is obtained by heating styracin or cinnyl cinnamate (a compound contained in liquid storax and in balsam of Peru) with caustic alkalies. It crystallizes in soft silky needles, having a sweet taste and an odor of hyacinths, melting at 33° C., and volatilizing without decomposition at a higher temperature. It is moderately soluble in water (about one part to twelve), freely in alcohol and ether. Dr. Beach had tested the efficiency of the antiseptic by applying it (one part to twelve of water) to a foul ulcerated surface, with the effect of completely deodorizing it. The same surface was dressed with sheet lint saturated with an emulsion of the styrone and olive oil, one part of the former to twelve of the latter, covered with thin gutta-percha, and the edges of the gutta-percha fastened to the skin by collodion. At the end of five days the dressing was removed, and the accumulated secretions were found sweet, and having the odor of the styrone, which is fragrant. This dressing was repeated at different intervals with a like result, the granulating process progressed as well as if it were under a carbolized or thymolized dressing. The pure styrone is slightly irritating to a raw surface, causing a burning sensation, but diluted to one part in six, either of oil or water, the result is a non-irritating emulsion. In either form it is a perfect deodorizer of a foul wound, and does not interfere with the progress of cicatrization. One part in twelve of oil or water is sufficiently strong to be effective. To determine the relative efficiency of carbolic acid, thymol, and styrone the following test was made: Three ounces of normal urine from the same specimen were placed in each one of four clean glasses. To the first glass were added ten drops of pure carbolic acid, to the second ten drops of pure thymol, to the third ten drops of styrone, and to the fourth nothing. The open mouths of the glasses were filled with borated cotton to protect the urine from dust. On the second day the urine without an antiseptic became decomposed, and was thrown away. The first specimen, containing carbolic acid, was offensive from the smell of decomposing urine on the sixth day, and under the microscope presented bacteria in the monad and rod forms, it had a strong urinous odor from the first day. The second and third specimens, preserved by styrone and thymol, were in good condition at the time of making the report, fifty-nine days later, and were free from any urinous or offensive odor. No fungoid forms could be detected under the microscope at that time.

No. 851.—**Coffee-Bean** (R. G. D, Forrest City, Ark.).
We sent your specimen to Dr. Laurence Johnson, of this city, who informs us that it is a pod of the *Gymnocladus canadensis* Lamb., a tree growing, according to Gray, from Western New York to Illinois, and southward. King (Amer. Dispensatory, 10th ed., p. 407) describes its characteristics and properties, and also mentions the use of the seeds of the pods as a fly-poison. Other names by which it is known are "*American Coffee-Bean*," "*Kentucky Coffee-Tree*," and "*Coffee-Tree*."

No. 852.—**Urethral Bougies** (J. B.).
For applying topical remedies to the urethra, either flexible bougies coated with some preparation are introduced, or thin bougies are made from substances which will gradually melt and distribute the remedial agent they contain over the diseased surface. It is impossible to give formulæ for the preparation of the latter which would be applicable to every kind of remedy. Our correspondent refers to a formula contained on page 277 of our last volume, which he has found on trial to work well. This consisted of 5 grains of iodoform and 10 grain of eucalpytus oil to 35 grains of butter of cacao, and was made of the size 9 or 10 of the English scales. The only defect he noticed was the brittleness of the bougie. We think this might be obviated by adding a little tallow to the mass. But we would not recommend to incorporate wax or any other substance which would greatly raise its melting point, *nor any substance* which is either *not soluble*, or which may possibly form an obstruction in the passage. Urethral bougies of butter of cacao may be formed of considerable length by means of very thin suppository syringes, and may with their aid be introduced to the proper depth.

No. 853.—**Jayne's Expectorant** (Subscriber, Alcona, Mich.).

Syrup of squills	2 ounces.
Tincture of tolu	½ ounce.
Tincture of camphor,	
Tincture of lobelia,	
Tincture of digitalis, of each	1 drachm.
Tincture of opium	2 drachms.
Powdered ipecac,	
Tartrate of antimony and potassium, of each	4 grains.

Mix.—*Kilner's Formulary.*

No. 854.—**White Rose Toilet Water** (*Idem*).

Extract of rose pomade (third wash)	1 gallon.
Pure spirit	32 ounces.
Oil of rose	2 drachms.
Extract of violet (third wash)	5 ounces.
Extract of jasmin	2½ "
Extract of musk	2 "
Tincture of camphor	12 drops.
Oil of patchouly	1 drachm.

Mix.—*Kilner's Formulary.*

No. 855.—**Moss Rose Perfume** (*Idem*).

Oil of rose	2 drachms.
Oil of santal	2 "
Extract of musk	12 ounces.
Extract of vanilla	4 "
Extract of orris	2 "
Extract of jasmin	4 "
Benzoic acid	1 drachm.
Pure alcohol, sufficient for	4 pints.

Mix.—*Kilner's Formulary.*

No. 856.—**White Rose** (*Idem*).

Oil of rose	2 drachms.
Oil of red cedar wood (true)	6 drops.
Oil of patchouly	4 "
Oil of orange (fresh)	½ drachm.
Extract of tube-rose	2 ounces.
Extract of orris	2 "
Extract of jasmin	2 "
Extract of musk	2 "
Benzoic acid	1 drachm.
Pure alcohol (to which four ounces of rose-water has been added), sufficient to make	4 pints.

Mix.—*Kilner's Formulary.*

No. 857.—**Hectographic Ink.**
A correspondent in Aukland writes:
"Can any of your contributors give us some information or formula for *hectograph inks*, their mode of preparation, the best colors, the best makers, and the proper pen to be used? Can the black crystals be relied upon? Violet and purple seem to answer best. It would, however, be desirable to have black and red. We find the ink from violet crystals, prepared as directed (see NEW REM., 1879, p. 339), to become thick and unmanageable with the pen."

We shall be glad to receive any information relating to the above. Meanwhile, we can state the results of our own experience. We have had occasion to use a good deal of hectographic ink, and found the following the best method of preparation: Methyl-violet, 1 part; water, 8 parts; glycerin, 1 part. Dissolve the violet in the water with the aid of heat, and add the glycerin. Digest the whole for about one hour; then allow it to cool, and add ¼ part of alcohol, or better, of wood-spirit (methylic alcohol). Preserve the product in small vials. Whenever any of

*Compare *Pharmacographia* [2], 274.

these is to be used, it should be shaken, so as to re-incorporate any precipitate which may have formed. The kind of violet known as "Violet de Paris" of Poirrier is the best. Or you may simply ask for "the deepest water-soluble violet" at any dealers in aniline colors (in New York, for instance, Kohnstamm & Co., 126 Chambers street, or Lutz & Movius, etc.).

In our experience, the best pen to be used for hectographic writing is F. Sœnneken's "Rundschrift Feder," or fluid-writing pen No. 5 (medium coarse), or No. 4 (coarse), which have a slightly oblique nib, and are the best pens for "round," open writing, or for back-hand. The hectographic original must be written with a *full* pen, so that every character, when dry, has a strong, golden reflection. The original copy must be written upon the *very best* thick, smooth writing paper, and *especial care must be taken never to touch* any part of the paper where writing is to go, with the hand or fingers, because the slightest amount of moisture from either will sink into the paper, and cause the hectographic ink to sink into its fibre, instead of remaining on the surface. Such spots are recognized, after having been written upon, by the dull appearance of the words and characters, and their want of a golden reflection. The copy must be *dry* before being laid on the pad; but the pad itself must not have been dry too long. If it has not been used for several days, it is best to wet its surface with cold water, and immediately afterwards to dry it with paper not giving up any fibres or fuss. The best paper to take copies on is *very thin*, super-calendered book paper, or smooth, *hard* writing paper.

Regarding *black* hectographic ink, we doubt whether any will ever be made. The deepest water-soluble *blue* —which is *nigrosine*—is ordinarily used as black, because it is blue-black even in dilute layers; but it will not stand dilution to such a degree as the violet. Nigrosine solution, on dilution, becomes gray and pale gray, which is a tint so gradually approaching that of the paper itself that it cannot be read after a certain limit is passed.

A *red* hectographic ink may be prepared in the same manner as the violet, by substituting *fuchsine* or *eosine*.

No. 858.—**Camphor Ice** (Ch. W.).

This correspondent states that the formula for *camphor ice* given in this journal, 1878, p. 220, yields a product which is not an *ice*, but rather a camphor *cream*, and is more emollient and delicate than the majority of cold creams.—On trial we find that our correspondent is correct, but we can state that the formula there given is based on very good authority. But it happens not unfrequently that even good authorities, particularly those who are themselves engaged in the manufacture and sale of products for which they publish working formulæ, either omit one or more necessary ingredients, or else add one or more unnecessary ones, so that the product differs more or less from the article of the same name which they manufacture themselves.

To obtain a product which is of a semi-transparent or "icy" nature it is necessary to avoid the introduction of opaque bodies as well as of air bubbles. The peculiar effect of the latter may be well observed when melting two samples of vaseline, and allowing one of them to cool without stirring, while the other is briskly stirred. When both are cool the former will be semi-transparent while the latter will be perfectly opaque, like a yellowish-white cerate. A correspondent has placed the following formula at our disposal:

Spermaceti	2 parts.
Paraffin (melting not over 110° F.)	2 "
Castor oil (colorless)	6½ "
Camphor	½ "
Oil of rose (or other odor)	q. s.

Dissolve the camphor in the castor oil with the aid of a gentle heat. Melt the spermaceti and paraffin, which must be perfectly clear and white, at as low a heat as possible, then add the castor oil containing the camphor. When the mixture becomes somewhat cooler, but before any of it congeals, add the flavor and pour it through a white muslin strainer into suitable jars or forms, which must have been previously warmed. Allow it to cool slowly, without stirring, covering the jars well.

No. 859.—**Analysis of Sample** (F. C. C.).

The article you sent us has turned out to be simply chalk, slightly colored with some red coloring matter which we have not examined. Just as we had finished our examination, we found imbedded in the remaining powder a hard lump which, on removal, was found to be *unstained* in the centre, from which we conclude that the mixture was made mechanically, and without great care. An accident caused us to lose that piece. Should you find another in your sample, please send it.

No. 860.—**Depilatories** (C.).

Depilatories owe their action to a destructive effect generally obtained by means of caustic alkalies or alkaline earths. No depilatory which is powerful enough to corrode hair could be applied to the sound skin for any great length of time without affecting the skin itself. The following may be used with proper care:

1. Crystallized sulphide of sodium..... 3 parts.
   Freshly burnt lime, in powder.....10 "
   Starch.....10 "

Mix with water to a paste and apply to the part where the hair is to be destroyed. Generally 3 or 4 minutes are sufficient. It should not be left to remain over 5 minutes, and if the desired effect is not completely produced, another application may be made at another time.

2. A concentrated solution of sulphide of barium is mixed with thick starch-paste, to a magma of suitable consistence, and applied to the part. This acts very quickly, and should be removed within about 5 minutes. The mixture must be made fresh each time, as it will not keep long unchanged.

3. Yellow sulphide of arsenic (orpiment), powdered..... 5 parts.
   Freshly burnt lime, powd.....50 "
   Starch.....30 "

Mix with water to a paste and apply it to the part in the thickness of a knife-blade. As soon as the layer begins to dry remove it. In this mixture the arsenical constituent is *said* to be rendered almost inert by the lime. Natural orpiment of scaly texture, mother-of-pearl fracture, and flexible scales is preferred as a depilatory to the artificial. We quote this formula chiefly for the purpose of *warning* against its use upon the living body. Though it *may* be harmless, we are not sure of it, and advise, under all circumstances, to confine its use only upon inanimate objects

4. As a curiosity we may quote the statement of Burnett, that the leaves of *Hernandia sonora* L., which grows upon the West India Islands and in the East Indies, yield, on pressure, a juice which removes the hairs completely without injuring the skin. If this should turn out to be true, the juice in question would be a valuable addition to the toilet.

None of the foregoing are capable of entirely preventing the renewal of the hair unless their action has been allowed to go so far as to destroy the hair follicles, which can hardly be done without extensive destruction of the skin, and consequent disfigurement. Another method now employed by dermatologists consists in passing down alongside the shaft of each individual hair, until it reaches the bottom of the hair follicle, a fine platinum needle, which is then connected with one of the electrodes of a galvanic battery, the other electrode being applied to the surface of the adjoining skin. The effect is to destroy the papilla from which the hair takes its growth and to permanently destroy the function of the hair follicle. This operation requires a considerable degree of skill, and is necessarily somewhat tedious and slightly painful, but it is the only mode of permanent depilation that is worthy of much attention.

No. 861.—**Madia Oil** (J. B. A.—See page 72 of this number).

No. 862.—**Candle-Tree** (J. B. A.—See page 69 of this number).

No. 863.—**Black Wash** (J. H. C.).

The discrepancy in the two formulæ which you quote, namely:

Parrish's Pharmacy, 4th edition, p. 854: Calomel, 1 ʒ; lime-water, 4 fl. ʒ;

U. S. Dispensatory, 13th edition, p. 1206: Calomel, 1 ʒ; lime water, 1 pint,

is quite natural, owing to the fact that there is no *officinal* formula for "Lotio nigra" in the Pharmacopœia. Each practitioner may use what strength he prefers; but, as most physicians generally prescribe "Black Wash" without specifying the strength, it might be well to agree upon the second formula quoted above, which is that usually followed.

As you are doubtlessly aware, the black precipitate formed in the mixture is black mercurous oxide, produced by the following reaction:

$$\underset{(471)}{Hg_2Cl_2} + CaO = \underset{(56)}{Hg_2O} + CaCl_2.$$

Calomel + Calc. oxide = Mercurous ox. + Calc. chloride.

Now, as lime-water, when saturated at about 15° C., contains about 0.13 per cent of lime, it follows that one pint of lime-water will contain about 0.61 grams, or about 9½ grains of lime. From the above reaction, it will be seen that 56 parts of lime can completely decompose 471 parts of calomel; hence the lime contained in 1 pint of lime-water can completely decompose 5 grams, or 77 grains of calomel. But since lime-water is rarely of full strength, it will, under ordinary circumstances, not be able to decompose this quantity. Probably the proportion 60 grains to the pint will come as near to practical accuracy as possible.

No. 864.—**Birch Beer** (Leo.).

The formula you ask for was published in our volume for 1879, page 216. We give in the following an additional process: The season for obtaining the liquor from birch-trees is in the latter end of February or the beginning of March, before the leaves shoot out, and as the sap begins to rise. If the time is delayed, the juice will grow too thick to be drawn. It should be as thin and clear as possible. The method of procuring the juice is by boring holes in the trunk of the tree, and fixing faucets of elder; but care should be taken not to tap in too many places at once, for fear of injuring the tree. If the tree is large, it may be bored in five or six places, and bottles should be placed under the apertures to collect the sap. When four or five gallons have been extracted from different trees, cork the bottles very close, and wax them, until the wine is to be made, which should be as soon as possible after the sap has been obtained. Boil the sap, and put four pounds of loaf sugar to every gallon, also the peel of a lemon cut thin; then boil again for nearly an hour, skimming it all the time. Now pour it into a tub; and as soon as it is almost cold, add a very small quantity of yeast, and let it stand five or six days, stirring it twice or thrice each day. Put a lighted sulphur match into the cask which is intended to contain the wine, stop it up until the match is burnt out, and then pour the wine into it, putting the bung lightly in till it has done working. Stop the cask very close for about three months, and then bottle the wine. It will be good in a week after it is put into the bottles.

No. 865.—**Cider** (Subscriber).

The quality of cider depends chiefly on the kind of apples from which it is made, and on the care with which the process of fermentation is regulated. Without going into any details, the manufacture of cider may be briefly described thus: The apples having been reduced to a sort of pulp, either by means of a pressing stone with a circular trough, or by a regular cider mill, this pulp is subjected to an increasing pressure, until all the juice (*must*) has been expressed.

The liquor thus obtained is allowed to stand undisturbed about twelve hours, in open vessels, to deposit sediment. The pure juice is then put into clean casks, and placed in a proper situation to ferment, the temperature being from 55 to 60° F. The fermentation will commence sooner or later, depending chiefly on the temperature of the apartment where the liquor is kept: in most cases during the first three or four days; but sometimes it will require more than a week to begin this process. If the fermentation begins early and proceeds rapidly, the liquor must be racked off and put into fresh casks in two or three days; but if this does not take place at an early period, and proceeds slowly, five or six days may elapse before it is racked. In general, it is necessary to rack the liquor at least twice. If, notwithstanding, the fermentation continues briskly, the racking must be repeated; otherwise, the vinous fermentation, by proceeding too far, may terminate in acetous fermentation, when vinegar would be the result.

The proper time for racking may always be known by the brightness of the liquor, the discharge of carbonic acid gas, and the appearance of a crust formed of fragments of the pulp. Whenever the liquid again begins to throw off carbonic acid gas, which may be observed by its extinguishing a candle held to the bung-hole, it must be racked off afresh.

In racking off the liquor, it is necessary to keep it free from sediment, and the scum or yeast produced by the fermentation. A supply of spare liquor must be reserved to fill up the barrels occasionally, while the fermentation continues. As soon as this ceases, the barrels should be bunged up closely, and the bungs covered with rosin, to prevent the admission of air. If the cider is weak, it should remain in the cask about nine months; if strong, twelve or eighteen months are necessary before it should be bottled.

No. 866.—**Ink from Domestic Sources of Tannin** (Unco).

We fail to see why any one should object to using imported nutgalls for manufacturing ink, unless it be merely for the purpose of knowing how to prepare ink in case of a failure of the supply of galls, as, for instance, in the Southern States, during the war of the Rebellion. It was probably for this reason alone that Dr. Francis Peyre Porcher included several formulæ for making ink, which were originally furnished by Mr. E. Ruffin to Dr. Bachman, in his valuable work, entitled *Resources of the Southern Fields and Forests*. The three formulæ there given are as follows:

No. 1. Take one measure (or one handful for each half-pint of ink intended to be made) of maple bark, and as much of pine leaves, both fresh, and previously separately chopped to pieces of not more than half an inch long. Put them into an iron vessel, and add two measures of water; measure the depth of the water, and mark the height of surface on a pointed stick thrust to the bottom; then add six more measures of water (making eight in all); boil very slowly (or simmer), until three-fourths of the fluid has evaporated, which may be known by its surface reaching the mark on the measuring stick; then remove the vessel from the fire, and add, for every half-pint of remaining fluid, one teaspoonful of green sulphate of iron, as much sugar, and a tablespoonful of vinegar; stir, and let stand from twelve to twenty-four hours; then strain the fluid (ink) from the solid refuse through a coarse cloth, and bottle for use.

No. 2. First, make a strong infusion of the inner bark of red oak, by steeping in water, twenty-four hours, a handful of chopped bark for each half-pint of water (or, otherwise, make a decoction, by boiling an hour and evaporating to the same quantity of water); decant the fluid, and add about a teaspoonful of green sulphate of iron for every half-pint of fluid, and keep for the use next to be directed.

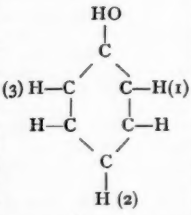
Take of ripe elder-berries four measures, in a wash-basin; mash them well in the hands; put the mixture of pulp and fluid juice into an iron vessel; measure the depth of the whole mass, as directed for No. 1; then add one measure of the before-prepared infusion of red-oak bark and boil very slow until evaporation has reduced the quantity of fluid to what it was at first, of the mashed elder-berries alone; remove the pot from the fire, put in

a teaspoonful of green sulphate of iron for every half-pint of ink to be made, and let the mixture stand for twelve or twenty-four hours; then strain through a coarse cloth, using strong pressure.

No. 3. Fill an iron pot half full of white-oak bark (coarse or fine), one-fourth full of red-oak bark, and one-fourth full of maple bark; fill the pot with water, and boil slowly, and for a long time; a teaspoonful of green sulphate of iron for every half-pint of ink to be made will produce the requisite tint; then strain, and bottle for use.

No. 867.—**Trichlorophenol** (J. B. N.).

This is one of the products of the action of chlorine on phenol or carbolic acid, three atoms of hydrogen of the latter being replaced by chlorine, in the odd places of the benzol-ring. This latter will be understood by referring to our explanation in the foot-note to the article on resorcin, in our last volume, page 269. The graphic formula of phenol is given in the margin, and in that of trichlorophenol, the hydrogens which are distinguished by the figures 1, 2, and 3, are replaced by chlorine. The substance is in form of fine, white needles, melting at 68° C. (154.4° F.), boiling at 244° C. (471° F.), and has a peculiar penetrating odor. It is a strong acid, but is not as caustic as phenol. It has been successfully employed in surgical and gynecological practice. Dr. Theodore Schuchardt, of Görlitz, Germany, manufactures it at 14 marks the kilo.



No. 868.—**Hospital Steward, U. S. A.** (H. H. J. N.).

In answer to your inquiry, we have to state that we have received the following information from the Surgeon-General of the Army:

Hospital stewards of the *first* class are appointed from among the *enlisted* men of the army, who, by services as hospital stewards of the *second* and *third* class, have proven themselves competent and worthy of the position. Applicants from civil life are not recommended for appointment unless they have previously served, creditably, and have been honorably discharged from the U. S. Army.

No. 869.—**Fluorescing Substances** (A. P., M.D.).

As a partial answer to your query, we quote here a list of the fluorescent substances, which are prepared and sold by Dr. Theodore Schuchardt, of Görlitz (see our December number for 1880, page 378):

1. *Fluorescin*, dissolved in ammonia. 2. *Saffranin*, dissolved in alcohol. 3. *Bichlor-bisulpho-anthracenic Acid*, dissolved in ether. 4. *Eosine*, bluish. 5. *Eosine*, yellowish. 6. *Anthracene-blue*. 7. *Æsculine*. 8. *Chlorophyll*. 9. *Magdala-red*, all dissolved in alcohol. 10. *Harmaline*, dissolved in ether. 11. *Tar-blue and eosine*, dissolved in alcohol. 12. *Bichlor-bisulpho-anthracenic Acid, with Coralline*, dissolved in ammonia. 13. *Bichlor-bisulpho-anthracenic Acid, with Eosine*, dissolved in alcohol. 14. *Tar-blue, with Magdala-red*, in alcohol. 15. *Fluorescine and Rosalic Acid* in alcoholic ammonia. 16. *Ammonio-sulphate of copper, with Fluoresceine*, in ammonia.

Literary and Scientific Society of the German Apothecaries of New York.—At the annual meeting of this Society, held on January 13th, the following officers were elected:

President, P. Frederick Lehlbach; *Vice-Presidents*, R. van der Emde, Gustav Mueller; *Recording Secretary*, L. G. W. Ruprecht; *Corresponding Secretary*, Charles Eimer; *Treasurer*, Theodore Louis; *Archivist*, Francis J. Zitz; *Librarian*, Paul Balluff; *Trustees*, G. Hebberling, Friedr. Burghoff, Gustav Pfingsten; *Delegates to American Pharmaceutical Association*, H. J. Menninger, C. Schleussner, Chas. Eimer, Gust. Ramsperger, Adolph Tscheppe.

FORMULÆ.

Logwood Ink.—Julius Krüger recommends the following as good formulas for preparing logwood inks:

1. Dissolve 1 lb. of extract of logwood in 15 lbs. of water, and add 1 oz. of alum and ½ oz. of yellow chromate of potassium.

2. Boil 10 lbs. of best rasped logwood with 100 lbs. of water, down to 80 lbs. When cold, add 1½ oz. of yellow chromate of potassium previously dissolved in 5 oz. of water.

3. Boil 1 part of best rasped logwood, and 3 parts of contused nutgalls with 36 parts of water, strain, and add 1 part of green sulphate of iron, and 1 to 2 parts of gum arabic.

4. Dissolve 1 part of extract of logwood in 50 parts of water, and add 2 parts of potash-alum. This ink is known in trade as "Kaisertinte," Imperial ink.

5. Dissolve 1 part of extract of logwood in 50 parts of water, and add enough solution of chloride of tin, to produce a deep violet color.

Others recommend, in place of chloride of tin, acetate of manganese, or acetate of iron, or other metallic salt.

Owing to the unequal composition of the commercial extract of logwood, it is best to assure one's self that the ink is not overcharged with metallic salts. This is best done by taking a small quantity of the finished product, heating it to boiling and exposing it afterwards for some time to air and light, when it should not deposit a copious precipitate.—From *Neueste Erfind. und Erfahr.*, 1880.

Indelible Acid-proof Black Ink.—Dr. Bering, of Bromberg, recommends the following mixture as a superior ink for all purposes where it is desired that the writing should resist acids or other caustic liquids, or the effect of dampness. It is particularly suitable for writing labels, but may also be used for ordinary writing.

Dissolve 200 parts of brown shellac in a solution of 300 parts of borax in 3,000 to 4,000 parts of water, with the aid of heat, and filter the solution while hot. To the filtrate add 75 to 100 parts of water-soluble nigrosine, 3 parts of tannin, 1 part of picric acid, 150 parts of ammonia, and 70 parts of water. The quantity of nigrosine may be increased, but the author states that 75 parts are sufficient to furnish an ink flowing easily from the pen.—*Pharm. Centralh.*, 1880, No. 35.

Dujardin-Beaumetz's Diarrhœa Mixture.—Dr. Dujardin-Beaumetz, in his lectures on clinical therapeutics, recommends the following mixture for general use in diarrhœa:

℞ Vini opii	gtt. 15	= gtt. 15
Bismuthi subnitratis	gms. 10	= grs. 150
Aquæ menthæ piperitæ	" 10	= fl. ʒ 2½
Aquæ lactucæ	" 70	= fl. ʒ 2¼
Syrupi krameriæ	" 30	= fl. ʒ 1

Aqua Lactucæ (Eau de Laitue) is prepared by distilling the flowering tops of *Lactuca sativa* L., 1 part, with water 2 parts, until 1 part of product is obtained.

Syrup of Chloral and Tar.—The following combination is in some repute, as a prompt remedy of obstinate cough, without necessitating the use of opiates, and producing great relief.

℞ Chloral	gm. 20	= grs. 300
Alcoholis	" 40	= fl. ʒ 14
Picis liquidæ	" 3	= grs. 45
Liquoris sodæ (sp. gr. 1.071)	" 8	= fl. ʒ 2
Aquæ destillatæ	" 25	= fl. ʒ 7
Syrupi	"1910	= fl. ʒ 49

Dissolve the chloral in the alcohol, and the tar in the water with the aid of the solution of soda. Mix the two solutions with the syrup, let stand for five hours and filter. The resulting syrup is clear, of a dark red-brown color, having the flavor of chloral and tar, and easily borne by delicate stomachs.

NEW PATENTS.

[*Complete specifications and illustrations may be obtained of any one or more of the following patents by sending the number, title, name of patentee, and date of issue, with twenty-five cents for each copy, to the Commissioner of Patents, at Washington, D. C., together with the name and address of the person requesting the same.*]

October 26th, 1880.

233,646. *Hernial Truss.*—Charles H. Tucker, Jordan, N. Y.

233,656. *Catarrh-Snuff.*—George H. Buck, Ute Creek, N. Mex. Assignor of one-half of his right to Lysander Flagg, Central Falls, R. I. Mixes one part by weight of Yerbo de San Pedro (*Senecio fendbri*) with four parts of Yerbo Verde (*Solidago virganrea*). Grinds and bolts; to be used as a snuff in catarrhs, colds, etc.

233,680. *Manufacture of Carbon Bisulphite and Sulphuric Acid from Pyrites, and Apparatus therefor.* Eli C. E. Labois and Leon L. Labois, Paris, France.—Patented in France, Oct. 18th, 1879.

233,681.—*Eyeglasses.*—Albert Landsberg, Detroit, Mich. Assignor to L. Black & Co., same place.

233,716. *Compound for Soup*—John F. Tyrrell, New York, N. Y. Composed of dried and granulated meat-extracts, dried and granulated vegetables, and dry and granulated seasoning; put up in air-tight vessels or cans, the several ingredients being so proportioned as to form, when boiled with water, or its equivalent, an agreeable and palatable soup.

233,728. *Condensed Cider-Compound.*—Edwin R. Cleveland, Unionville, O. Concentrated apple-juice and salicylic and aromatic sulphuric acids.

233,738. *Eye-glasses.*—Charles N. Dunham, Philadelphia, Pa.

233,750. *Desiccating Eggs.*—Halver Halverson, Nashua, N. H.

233,756. *Eye-glasses.*—Gideon C. Hilpert, Hill, N. H.

233,758. *Muscle and Skin Beater.*—Martin L. Holbrook, New York, N. Y.

233,796. *Bottle-Stopper.*—David S. Paisly, Cleveland, Ohio.

233,824. *Celluloid Crutch-Top.*—Joshua Whittemore, Wakefield, Mass.

November 2d, 1880.

233,906. *Combined Stirrer and Thermometer.*—Benjamin F. Adams, Brooklyn, N. Y. A thermometer is mounted in the handle of a stirring paddle so as to be immersed in the fluid in which the stirrer is used.

233,916. *Manufacture of Aluminous Cake.*—George F. Bihn and Robert Hurlein, Philadelphia, Pa., assignors to the Pensylvania Salt Manufacturing Co., same place. A process for manufacturing white aluminous cake from ferruginous aluminous sulphate, by treating the aluminous sulphate, in the semi-fused condition, with sulphites, or hyposulphites of the alkalies, alkaline earths, or the metallic bases.

233,951. *Blow-Pipe.*—Theodore C. Stevens, Galesburg, Ill. A method or process of intensifying the heat of a blow-pipe flame, consisting in forcing air through light petroleum or hydrocarbon oil, dividing the mixture thereof, and directing one portion of said mixture against or through the flame of the other portion.

233,951. *Vapor-Inhaling Pad.*—Charles S. Thompson, Philadelphia, Pa., assignor of one-half to Joseph W. Snyder, same place.

233,963. *Thermometer-Tube.*—John Barry, New York, N. Y. A glass jacket for a thermometer-tube having a greater thickness upon one side, so as to form a lens-like protuberance upon the tube serving to magnify the mercurial column.

233,980. *Method of Making Capsules.*—Charles Chuswright, Parkhurst Road, England. Patented in England, Nov. 26th, 1879. A method of preparing capsules which consists in first flattening the capsule, then perforating, cutting, stamping, or embossing it, and finally reopening the capsule.

234,003. *Dropping-Bottle.*—Franklin M. Dixon, Philadelphia, Pa.

234,025. *Apparatus for Burning Sulphur to Produce Sulphuric Acid.*—Henry Glover, Silvertown, Victoria Docks, London, Eng. Patented in England, Sept. 19th, 1879.

234,048. *Liniment.*—Francis E. Marcum, El Dorado, Kansas. Consists of oil of turpentine, oil of cedar, oil of sassafras, tincture of quassia, gum-camphor, sulphuric ether, aqua ammonia, chloroform, and alcohol.

November 9th, 1880.

234,124. *Sponge Holder.*—George Goetting, New York, N. Y. A concave or cup-shaped disc is attached to the end of the handle and has a pin projecting from its centre. A small chain, attached to one side of the cup and capable of being fastened temporarily on the opposite side, holds the sponge in place.

234,145. *Manufacture of Bichromates.*—Henry Pemberton, Philadelphia, Pa. As an improvement in the manufacture of bichromate of potassa and other chromates, a method of treating the calcined mixture of chrome ore, bases and salts, by passing carbonic acid gas into the same.

234,224. *Nursing Bottle.*—Edward A. Barton, Montreal, Quebec, Canada.

234,307. *Filtering apparatus.*—Prosper A. Maigen, London, England, and Jules Retif, Fils, Lyons, France. Patented in England Nov. 28th, 1878.

234,333. *Truss Pad.*—Amos Read, Jamestown, N Y. In a truss pad, the combination of the clam-shell with its natural ridges retained and the inner filling of plaster of Paris, or its equivalent, carrying suitable pins or studs for attachment to the belt.

234,342. *Bottle-Stopper.*—William W. Stewart, Brooklyn, N. Y.

234,348. *Electrical Therapeutical Appliance.*—Emily A. Teft, East Otto, N. Y.

234,379. *Galvanic Belt.*—Charles N. West, San Francisco, Cal.

9,460 (reissue). *Eye-Glasses.*—John Schaffer, St. Louis, Mo.

November 16th, 1880.

234,413. *Galvanic Battery.*—George L. Leclanché, Paris, France, assignor to Hilborne L. Roosevelt, New York, N. Y. Patented in France, April 26th, 1878.

234,425. *Roofing Composition.*—Christopher F. Pearson, Portland, Oreg. Consists of yellow ochre, whiting, litharge, india-rubber, and linseed oil.

234,462. *Apparatus for Condensing Mercurial Fumes.*—Thomas W. Dresser, San Jose, Cal.

234,479. *Gas Inhaler.*—Huston R. Hurd, Cleveland, Ohio.

234,581. *Eye-Glasses.*—Robert Kabus, New York, N. Y.

234,582. *Bottle Wrapper.*—Martin T. Kacer, St. Louis, Mo.

234,595. *Manufacture of Ferric Oxide and Cupric Chloride.*—Juan F. N. Macay, Charapote, Ecuador. Patented in England, Oct. 17th, 1879, and in Germany, Dec. 12th, 1879.

234,596-7. *Artificial Limbs.*—Amasa A. Marks, Greenwich, Ct.

9,465 (reissue). *Apparatus for Cooling Soda Water and other Liquids.*—Alvin D. Puffer, Boston, Mass.

November 23d, 1880.

234,646. *Opener for Cans and Bottles.*—Isaac N. Arment, Dayton, Wash.

234,672. *Apparatus for Administering Nitrous Oxide Gas.*—George H. Hurd, Cleveland, Ohio.

234,680. *Liquid Starch-Polish Compound.*—Santiago Lima, New York, N. Y., asignor of one-half to George W. Hojer, same place. Consists of water, borax, refined tallow, cottonseed oil, gelatin, and castor-oil.

234,704. *Manufacture of White Aluminous Cake.*—George F. Bihn, Philadelphia, Pa., assignor to Pennsylvania Salt Manufacturing Co., same place. The process consisting in treating hallosyte in a pulverized condition or other state of fine subdivision mixed with finely pulverized bauxite with sulphuric acid, and then treating the semi-fused mass formed with sulphites, bisulphites, or hyposulphites of alkalies, alkaline earths, or the metallic bases.

234,726. *Receiver, Regulator, and Cooler, for Beverages under Pressure.*—William L. Roorbach, Philadelphia, Pa.

234,785. *Cough Medicine.*—Julia A. King, Sherman, Texas. Composed of a decoction of Indian pleurisy-root (*Asclepias tuberosa*), saltpetre, honey, and brandy.

234,793. *Deodorizing Noxious Gases.* — Adam W. Louth, Philadelphia, Pa.

234,807. *Bottle.*—Emmet P. Putnam, La Church, La.

234,808. *Compound for Catarrh.*—Mary A. Reaves, Snelling, Cal. Consists of an infusion of tobacco leaves mixed with an infusion of the leaves of wild mallard (*Malva borealis*).

November 30th, 1880.

234,879. *Ventilated Bath-Box for Chemical and Photographic Purposes.*—James C. Macurdy, Booneville, Mo.

234,998. *Apparatus for Purification of the Products Resulting from Distillation of Wood.*—Jean A. Matthew, Hunter's Lake, Pa.

235,013. *Blank for Saddle Bags.*—Richard T. Pettus, Kingston, Ky.

235,057. *Process of Refining Paraffin Wax.*—Wm. M. Sloane and Wm. Bell, New York, N. Y., asignors to said Bell.

9,481. *Manufacture of White Pigments.* — Henry Knight, Liverpool, England, assignor to Thomas Griffiths, same place. Original, 212,017.

December 7th, 1880.

235,193. *Manufacture of Artificial Indigo.* — Adolf Baeyer, Munich, Bavaria, assignor to Badische Anilin und Soda Fabrik, Baden, Germany. The present improvement consists in sulphuring orthonitrophenylpropiolic acid and then treating it with reducing agents, whereby the indigo-blue color is produced.

235,207. *Paint Can.*—John G. Curtis, Boston, Mass.

235,223. *Medicinal Preparation for the Hair.*—Samuel Foster, Carthage, assignor of one-half to Fred. Champagne, Moriat, N. Y. Consists of alcohol, castor oil, bay-rum, cloves, mace, sage, elecampane, salt, tincture of cantharides and red saunders, with any suitable perfume.

235,231. *Manufacture of Carbonate of Magnesia.* — Frederick Gutzkon, San Francisco, Cal. Consists in the heating of the pulp of magnesium hydrate, and forcing carbonic acid gas through the pulp while in a heated state, whereby the carbonate is produced in a light and flocculent form.

December 14th, 1880.

235,365. *Asphaltum Paint.*—Archibald K. Lee, Philadelphia, Pa., assignor of one-half to Washington Horter, same place. The process of converting natural asphaltum into a base for paints, consisting in first preparing an alkaline solution and rendering it caustic with lime, and adding common salt thereto, then raising the solution to the boiling point and adding the natural asphaltum and linseed or other vegetable oils thereto, and also ochre or whiting, thus forming a neutral basis for paints, to which any pigment may be added.

235,436. *Eye-Glasses.*—Francis Hopkins, New York, N. Y.

235,487. *Fumigating Compound.*—Ann Eliza Arnold, Providence, R. I. A compound for preserving food by fumigation, composed of sulphur, chloride of lime, and nitre.

235,505. *Amalgamating Mortar.* — Joshua S. Buck, Oakland, Cal.

235,521. *Distilling and Rectifying Apparatus.*—Edward Fox, Brooklyn, N. Y., assignor to himself and Kieran Egan, same place, and Joseph L. Gerety, New York, N. Y.

235,566. *Artificial Ear-Drum.*—Homer P. K. Peck, Cincinnati, Ohio.

December 21st, 1880.

235,613. *Evaporating Pan.*—Hugh O. Ames, New Orleans, La.

235,615. *Baking-Powder.*—Charles E. Avery, Boston, Mass., assignor to Lucinda M. Avery, same place. A bread-raising compound composed of acid lactate of calcium and an alkaline bicarbonate or carbonate.

235,618.—*Apparatus for the Evaporation of Liquids.*—Oliver L. F. Browne, Syracuse, N. Y.

235,663. *Pendulum Scale.*—John B. Atwater, Geneva, Ill.

235,704. *Medical Compound.* — Amasa Rippetae, Terell, Texas. Forms a saturated decoction of *amphiachyris dracunculoides*. To one gallon of this add eight pounds of white sugar and one pint of the best spirits. Then to one gallon of above mixture adds one quart of the usual decoction of sarsaparilla. This is administered in doses of one tablespoonful three times a day.

235,730. *Perforated Soap.* — Henry J. Brice, San Francisco, Cal., assignor of one-fifteenth to Thomas J. W. Robertson, Washington, D. C. As a new article of manufacture a cake or bar of soap, having perforations for the purpose of facilitating its drying and solidification.

235,820. *Apparatus for the Decomposition of Chloride of Calcium.*—Ernest Solvay, Brussels, Belgium. Patented in England, Feb. 25th, 1880.

December 28th, 1880.

235,930. *Eye-Glasses.*—Henry Bersch, Philadelphia, Pa., assignor of one-half to John L. Bersch, same place.

235,953. *Manufacture of Syringes from Celluloid and other Plastic Material.*—Marshal C. Lefferts, New York, N. Y. Assignor to the Celluloid Manufacturing Co., same place. A syringe, the barrel of which is formed of translucent celluloid, or analogous translucent material.

235,958. *Manufacture of Bougies, Stomach-pumps, and other Surgical Instruments from Celluloid and Analogous Plastic Material.*—Gustav Otto, Jersey City, N. J. Assignor to the Celluloid Manufacturing Co., New York, N. Y. A surgical instrument composed wholly or in part of flexible celluloid or other compound of pyroxylin.

235,959. *Manufacture of Pessaries from Celluloid and Analogous Plastic Material.—Ibid.* A pessary composed wholly or in part of flexible celluloid or orther compound of pyroxylin.

235,982. *Pendulum Scale.*—Charles F. Batt, Phœnixville, Pa.

235,996. *Vinegar Generator.*—Samuel J. Clark, Detroit, Mich. For the manufacture of vinegar by the quick process, which consists in bringing the fluid to be converted into vinegar into intimate contact with a current of warm air, by which the oxidation is performed in a short time. The heat generated by the oxidation causes an upward current of air upon the increased surface of the fluid.

236,033. *Bandage.* — Willard E. Hull, Waterbury, Ct., assignor of one-half to Jean Jacques, same place. A bandage consisting of a strip of fabric spread or coated with a composition of a mixture of rubber, litharge, sulphur, sassafras, elder, rosemary, and arnica.

236,035. *Surgical Bandage.*—Jean Jacques, Waterbury, Ct. As an article of manufacture, the strip of fabric coated or furnished at its ends, or at intervals in its length, with an adhesive material (described) which adheres to itself, but not to the bandage proper, whereby all pinning of the bandage is done away with.

236,043. *Bottle-Filler.* — Emile Klieber, New Orleans, La.

236,051. *Manufacture of Chloride of Zinc.*—Edward J. Mallett, Jr., of New York, N. Y. The improvement in the art of obtaining zinc chloride, which consists in applying the refrigerant to the surface stratum only of a solution containing zinc sulphate and a salt, such as sodium chlorate.

ITEMS.

The Revision of the German Pharmacopœia.—In our last number we gave a list of questions, or propositions, which were laid before the committee. The following are the decisions of the committee on the several points:

1. All titles will be in alphabetical order.
2. The present nomenclature of salts will be retained.
3. The present method of distinguishing parts of plant (radix, rhizoma, tuber; folium, herba; fructus, semen) will be retained.
4. Chemicals are to be given without formula.
5. Antiquated synonyms are to be cancelled. Synonyms in use are to be mentioned in the title and in the index.
6. The text of every article is to be so arranged that its characteristics and properties are to be first mentioned, and afterwards any requirements as to purity, condition, etc.

In describing crude drugs, the relative succession of the characters is to be the same throughout.

In describing chemicals, the following succession shall take place: Officinal name, usual synonyms, German name, directions for preparing, if necessary; physical properties, chemical properties, reactions of identity, tests for purity, method of keeping.

7. In the case of chemicals, the allowable limit of impurities is to be fixed.
8. The methods of testing the various preparations are to be exactly described.
9. In the case of certain drugs, the method of preservation is to be clearly defined.
10. Processes for chemicals are to be given only when necessary.
11. In the text of any article, reference may be made, as heretofore, to details already fully given in connection with other drugs.
12. The reagents are to be placed separately, and they shall be of an equivalent strength.
13. The strength of volumetric test solutions is to be given.
14. A table of maximum doses is indispensable for the pharmacopœia.
15. The maximum dose of each drug or preparation is to be mentioned, also, in the text.
16. The table of maximum doses is to be revised at stated intervals.
17. Medicines for hypodermic use are to have a label attached containing—
    1. The words "Zu Einspritzungen unter die Haut" ("For hypodermic injection");
    2. A copy of the corresponding prescription written out in full.
18. The table of *daily* maximum doses is to be retained.
19. A table of maximum doses for children, or a table of solutions for hypodermic injections, with statement of maximum doses, is not to be introduced.
20. Alterations of tables B and C are to be postponed until the text of the Pharmac. is completed.
21. A table of atomic weights is not to be introduced.
22. A table of solubility in water, alcohol (of the Pharm.), and ether (0.728), at 15° C., is to be introduced.
23. Also a table of spec. grav. of liquids, between 12° and 25° C.
24. A systematic table, grouping the articles of the Pharm. according to their origin, is not to be introduced.
27. The materials necessary for Lister's antiseptic treatment are not to be introduced in the Pharm.

The preceding are the principal decisions which were arrived at during the first session of the Commission appointed to revise the Pharm. At the same time, it was resolved that the text of the work should be, hereafter, in German, but this requires the sanction of the Government, which has not yet rendered its decision. The above preliminary decisions have been promulgated through the German press by the presiding officer, so that opportunity may be given to criticise them, and to offer amendments before the next meeting of the Commission.

From the list of articles at present officinal in the German Pharmacopœia, the Commission has eliminated not less than about 350 drugs, chemicals, and preparations. It would be of no benefit to enumerate them here, because most of them are antiquated remedies, but little in use, and ought to have been abolished years ago. Yet, among this list of abolished drugs, we find some for the elimination of which there was, in our opinion, no good reason; at least, there are as strong reasons in their favor as against them. These are:

Acidum hydrochlor. dil.; Acid. nitric. dil.; Argent. nitric. crystallisatum; Bals. Tolutanum; Bromum; Cortex Cinnam. Zeylan.; Cortex Mezerei; Emplast. Belladonnæ; Extr. Colocynth. Co.; Ext. Fabæ Calabaricæ; Ext. Liquiritiæ Rad.; Extr. Stramonii; Ferrum citricum ammoniatum; Fructus Capsici; Kino; Liquor Ferri chlorati; Morphinum aceticum; Oleum Cinnam. Zeylan.; Guarana; Pulv. aromat.; Radix Belladonnæ; Radix Arnicæ; Resina Scammonii; Semen Stramonii; Syr. Sarsap. Co.; Tinct. Asæ fœtidæ, Belladonnæ, Capsici, Ferri Chlorati, Guaiaci, Guaiaci amm., Kino, etc.; Ung. Belladonnæ; etc., etc.

The following *new drugs* will be introduced:

Acidum oleicum (crude, provided it is to be used in making adhesive plaster); Acidum salicylicum; "Amylum nitrosum" (under another, more appropriate name); Apomorphinum hydrochloricum; Charta sinapisata; Cortex Chinæ (*one*, in place of the 3 now officinal); Elixir amarum (of Pharm. Militaris); Extractum Chinæ (only *one*); Extr. Secalis cornuti (to be soluble, to a clear liquid, in water, and, if injected hypodermically, not to produce abscesses); Folia Jaborandi; Koussinum (cryst.); Manganum sulphuricum; Natrium bromatum; Natrium jodatum (both dry); Natrum benzoicum; Natrum salicylicum; Pilocarpinum hydrochloricum; Pulvis contra sudorem pedum (under different title. This "Foot-sweat Powder" is chiefly introduced for the use of the army, as the new pharmacopœia is to be extended also to army practice; Sal Carolinense factitium (artificial Carlsbad Salt); Sapo butyraceus; Talcum pulveratum; Vaselinum (reserving the more accurate examination of the commercial sorts); Vinum Tokayense and Zincum oxydatum.

A few other new drugs are still under advisement. Besides, it remains to be decided at the next meeting whether certain drugs and preparations used in veterinary practice are to be admitted or not.

We shall occasionally recur to this subject, and hope to be able to furnish similar information regarding the Revision of our own Pharmacopœia.

Alphonso Wood was born A.D. 1810 (Sept. 17th), in Chesterfield, N. H. His first fifteen years were spent at home in the manse, where his grandfather lived, dividing his time between rural employments and study in the village school and academy. After this his winters were occupied in teaching village schools himself until the date of his graduation at Dartsmouth College, A.D. 1834. Immediately after this he became engaged as teacher of Latin and natural history, in the Kimbal Union Academy, at Meriden, N. H., where, with the interruption of one year only, he remained for fifteen years. This one year he spent at Andover, Mass., in the study of theology, endeavoring to fulfil the long cherished wish of his parents, but his sacred studies were cut short by a peremptory summons to return to Meriden.

Soon after this year, Mr. Wood was licensed, after examination by the Sullivan County Conference, as a preacher of the Gospel, but his ministry was never more than an occasional service among the neighboring churches, in connection with his labors in the academy. It was during his residence at Meriden that he first conceived the purpose of preparing a class-book of botany.

The purpose arose very naturally, first from his excessive fondness for the science, and secondly from his want of a suitable text-book as a teacher of natural history. Devoting his leisure hours and vacations largely to botanical excursion sand investigations, seven years passed, and in 1845 the "Class-Book of Botany" was first issued.

The work was not stereotyped, being an experiment, and only 1,500 copies were issued. An unexpectedly great demand soon exhausted this edition.

In preparing for a new edition, Mr. Wood passed the spring and summer of 1846 in the Western States, whither his parents had then removed, botanizing in the prairies and barrens, in order to extend the limits of his flora as far west as the Mississippi River.

He was accompanied by his wife (Lucy, daughter of Benj. Baldwin, Esq., Bradford, Vt.) and his son Frank Alphonso. This son afterwards became a missionary under the Presbyterian Board, F. M., in Syria, where he died after seven years of labor, at the age of 33. In the spring of 1849, Mr. Wood resigned his professorship in the Kimbal Union Academy on account of impaired health, and entered on active service as civil engineer in the construction of a railway from Rutland, Vt., to Albany, N. Y. On the completion of this road, in 1852, he removed with his family to Cleveland, Ohio, and resumed his profession as teacher in the Cleveland Female Seminary, associated with Rev. Elbridge Hosmer, to whom, after two years, he transferred his interest in the school, and again removed to become more permanently located at College Hill, near Cincinnati, as professor in Ohio Female College, founded by Rev. John Covert. Here he passed six years, during which time the college buildings were destroyed by fire, and rebuilt under his own supervision, and restored to a

PROF. ALPHONSO WOOD, A.M., PH.D.

full tide of prosperity. In 1858, having transferred his interest in the college to Messrs. Cary and Vail, he resigned, to enter on a new enterprise at Terre Haute, Ind., in connection with Mr. Covert—the establishment of the Terre Haute Female College.

This college speedily attained to great prosperity and usefulness, and after two years, in the autumn of 1860, in order to facilitate the reprinting of his books, Prof. Wood removed with his family to Brooklyn, N. Y.

The "Class-Book" had become an important interest, and to extend the area of its flora an exploration of the Southern States, lasting six months of the year 1857, and another shorter one in his own carriage, had been accomplished.

After having completed the third reprint of the "Class-Book." Prof. Wood again resumed the business of instruction, opening in 1861 the Brooklyn Female Academy. In spite of the war this institution proved a success, attaining a high repute and generous patronage during the four succeeding years, but the love of his favorite science again allured him away, and in October, 1865, Mr. Wood embarked alone for California, leaving his son in the New York University, and his wife and daughter in Freehold, N. J. In the Pacific States he sojourned one year, in constant travel, surveying the mountains, mines, rocks, and people, but especially the plants of that glorious land, from San Diego to Puget's Sound, and returning by way of the Isthmus in November, 1866. Much of this journeying was done on horseback and alone, this method affording him the best means for pursuing his studies, his genial face and pleasant word always serving as safe passport with Indians or rough trappers. In the spring of 1867, having transferred his interests in Brooklyn, he once more collected his family into a new home in the village of West Farms, then a suburb of the City of New York, now annexed, where he was residing at the time of his death. The last years of Prof. Wood's life were employed in the revision and republication of his several works on botany, in preaching occasionally, and in fulfilling the duties connected with the Chair of Botany in the New York College of Pharmacy, which he had occupied for two years.

The following is a list of his publications, all issued at present by A. S. Barnes & Co., New York:

1st. "Class-Book of Botany," 1845; 2d. "Object Lessons in Botany," 1862; 3d. "Monograph of Liliaceæ," 1869; 4th. "Botanist and Florist," 1870; 5th. "Plant Record," 1872; 6th. "Fourteen Weeks in Botany," 1879 (written jointly with Prof. J. D. Sterle); 7th. "Flora Atlantica,' 1879.

The Twelfth Annual Meeting of the California Pharmaceutical Society and College of Pharmacy was held at the hall of the Academy of Science, on Thursday evening, Jan. 13th. The following officers were elected: *President*, Emlen Painter; *First Vice-President*, S. A. McDonnell; *Second Vice-President*, J. H. Dawson; *Corresponding and Recording Secretary*, E. A. Schreck; *Treasurer*, William J. Bryan; *Librarian and Curator*, Ph. L. Vreeland; *Editor*, William M. Searby *Board of Trustees*, F. C. Keil, John Calvert, A. L. Lengfeld, William J. Bryan, E. A. Schreck, Emlen Painter, and S. A. McDonnell.

Reports were submitted by the several committees and outgoing officers. Among the former, the Committee on Legislation presented a Pharmacy Act, which, with some changes, was accepted, and directed to be brought before the Legislature without delay.

Owing to the lateness of the hour, the reading of papers and answers to queries was postponed to an adjourned meeting, to take place one month hence.

PHARMACEUTICAL CALENDAR.—March.

N. B.—The officers of Societies, Colleges of Pharmacy, Pharm. Associations, etc., will oblige us by forwarding schedules of their meetings, lists of officers, and any changes that may be desirable.

Date.	Society Meetings.
Tues. 1st.	Phila. Coll. Pharm.—Trust. Meet.
Wed. 2d.	Chicago Coll. Ph.—Trust. Meet.
Thurs. 3d.	N. Y. Coll. Ph.—Trust. Meet.
	Massach. Coll. Ph.—Trust. Meet.
	Louisville Coll. Ph.—Pharm. Meet.
Fri. 4th.	Cleveland Pharm. Ass.—Bi-monthly Meet.
Mon. 7th.	Massach. Coll. Pharm.—Annual Meet.
	Erie Co. Ph. Ass.—Meet. (at Buffalo).
Tues. 8th.	Kings Co. Ph. Soc.—Meet. (at Brooklyn).
	Pittsburg Coll. Ph.—Trust. Meet.
	St. Louis Coll. Pharm.—Pharm. Meet.
	National Coll. Ph.—Trust. Meet.
Wed. 9th.	New York Coll. Ph.—Alumni, Exect. M.
	Cincinnati Coll. Ph.—Mo' Pharm. Meet.
Thurs. 10th.	Newark Pharm. Assoc.—Annual Meet.
	Louisville Coll. Ph.—Directors' Meet.
	Phila. Coll. Ph.—Alumni, Pharm. Meet.
	Maryland Coll. Ph.—Meet.
	N. Y. Germ. Apoth. Soc.—Meet.
Mon. 14th.	Louisville Coll. Ph.—Annual Meet.
Tues. 15th.	Phila. Coll. Ph.—Pharm. Meet.
	St. Louis Coll. Ph —Trust. and Alumni M.
Thurs. 17th.	New York Coll. Ph.—Annual Meet.
	New York Coll. Ph.—Commencement.
Thurs. 28th.	Phila. Coll. Ph.—Annual Meet.